

FIG. 1

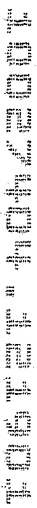


Table 1. *Continued*

Variable	Mean	SD	Median	Mode	Range	Skewness	Kurtosis
Age	34.5	10.5	33.0	33.0	18-55	-0.05	3.00
Gender	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Marital status	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Education	12.5	1.5	12.0	12.0	9-15	-0.05	3.00
Income	1.5	0.5	1.0	1.0	1-2	-0.05	3.00
Occupation	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Religion	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Health	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Stress	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Depression	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Loneliness	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Life satisfaction	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Self-esteem	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Resilience	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Optimism	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Gratitude	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Forgiveness	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Empathy	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Compassion	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Kindness	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Generosity	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Patience	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Humility	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Modesty	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Shyness	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Introversion	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Extroversion	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Social skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Communication skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Problem-solving skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Decision-making skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Leadership skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Teamwork skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Conflict resolution skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Emotional regulation skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Stress management skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Resilience skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Optimism skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Gratitude skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Forgiveness skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Empathy skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Compassion skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Kindness skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Generosity skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Patience skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Humility skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Modesty skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Shyness skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Introversion skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Extroversion skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Social skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Communication skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Problem-solving skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Decision-making skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Leadership skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Teamwork skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Conflict resolution skills	1.0	0.0	1.0	1.0	1-1	0.00	0.00
Emotional regulation skills	1.0	0.0	1.0	1.0			

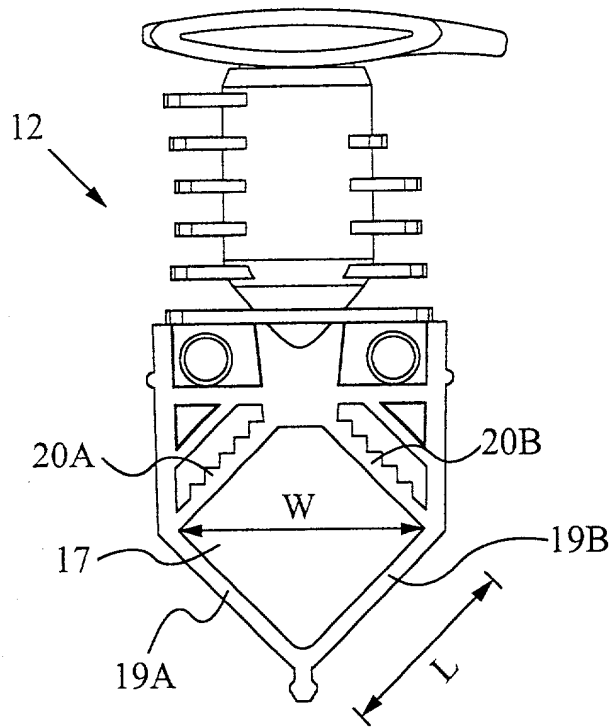


FIG. 4

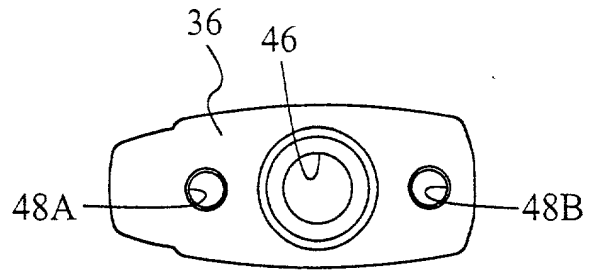


FIG. 3

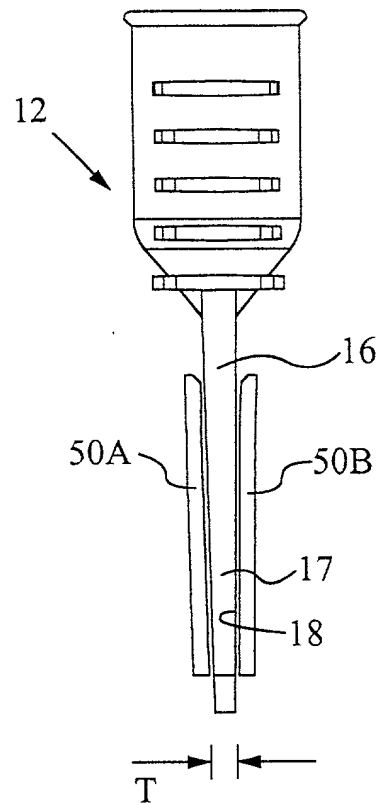


FIG. 5

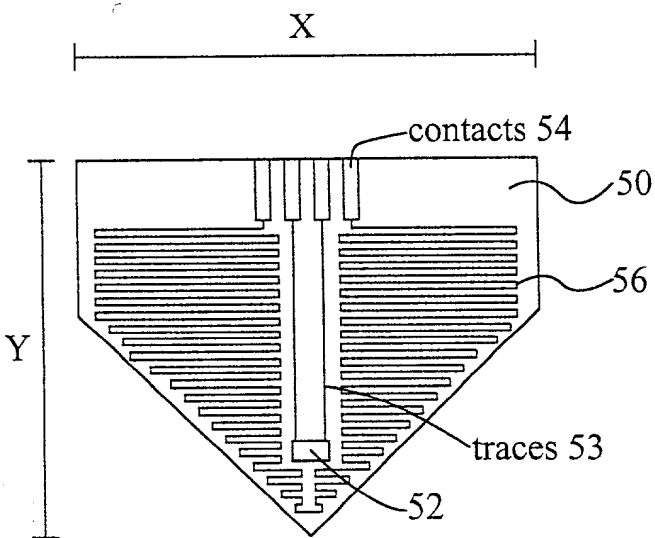


FIG. 6

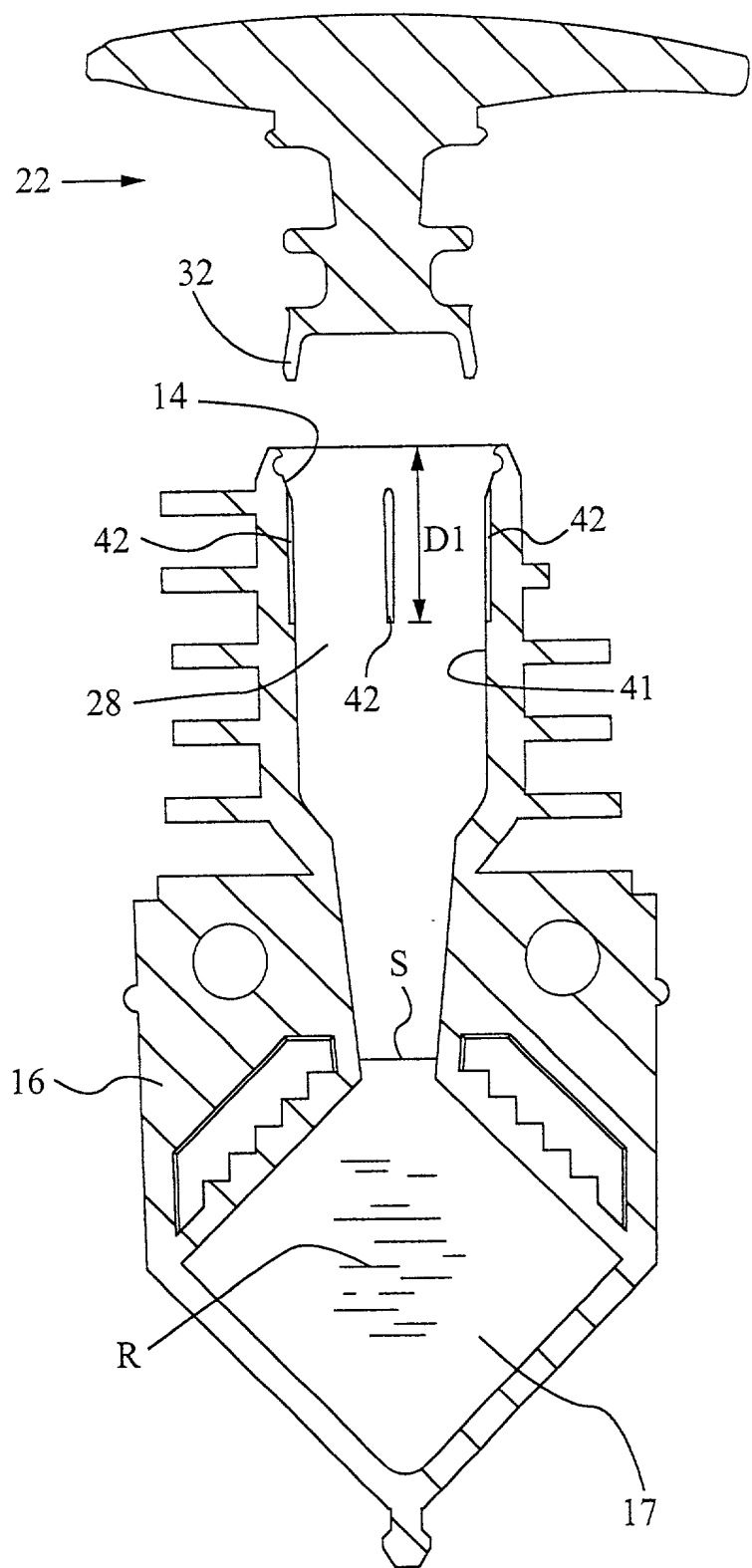


FIG. 7A

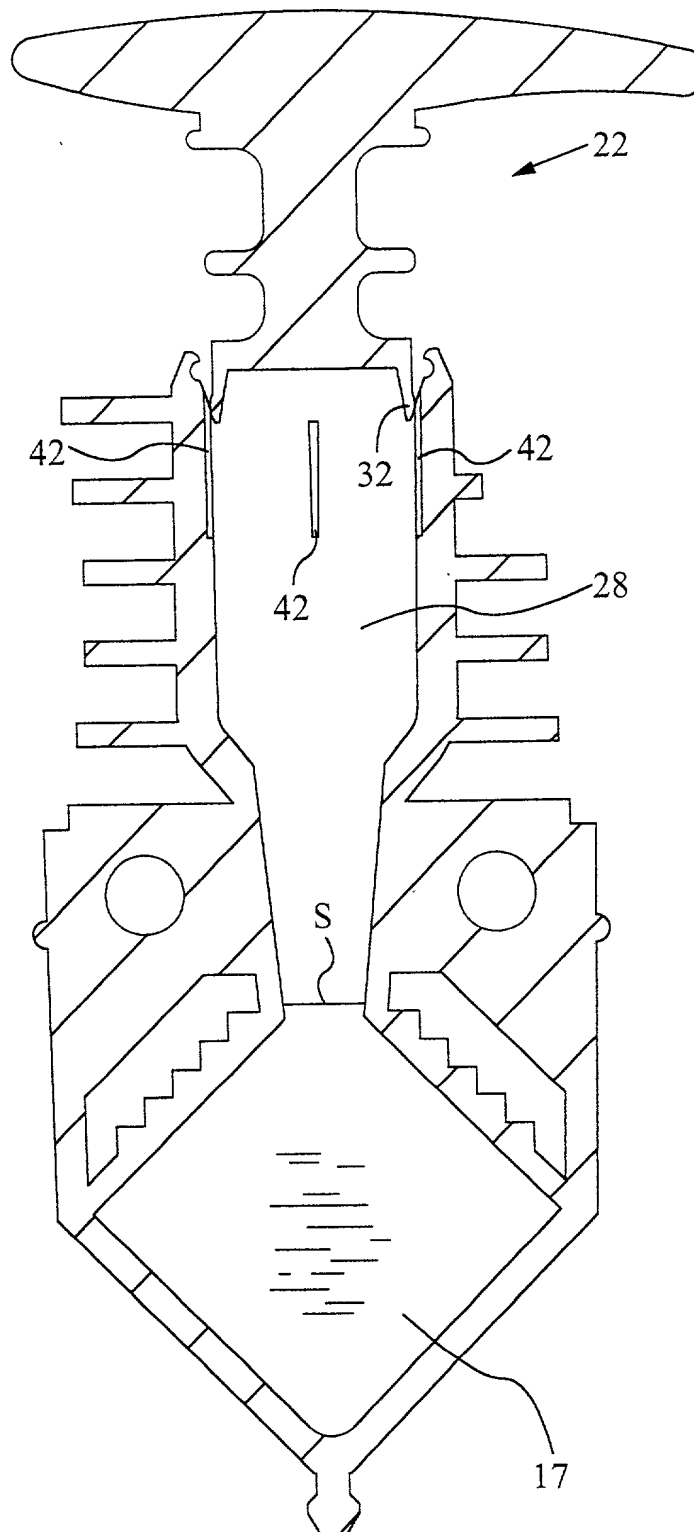


FIG. 7B

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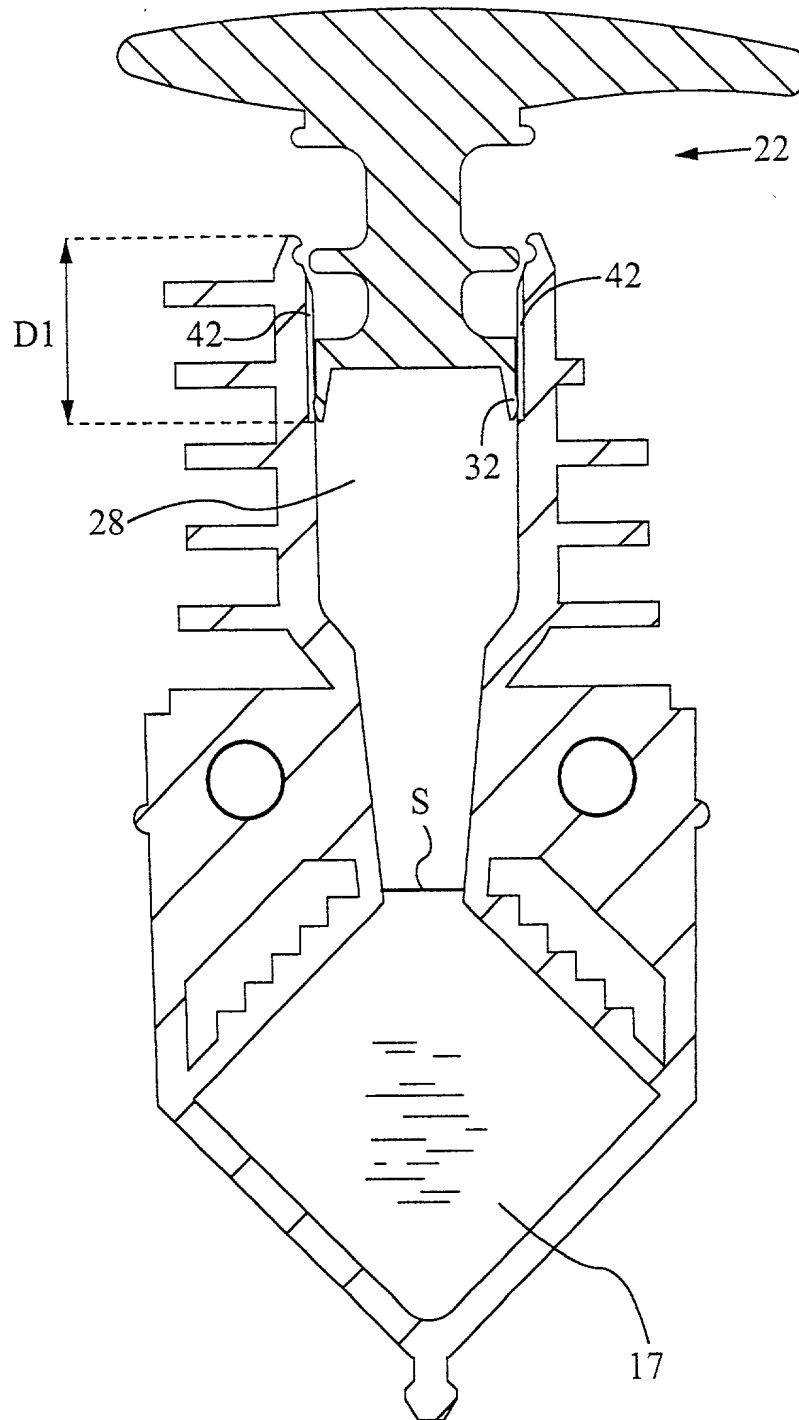


FIG. 7C

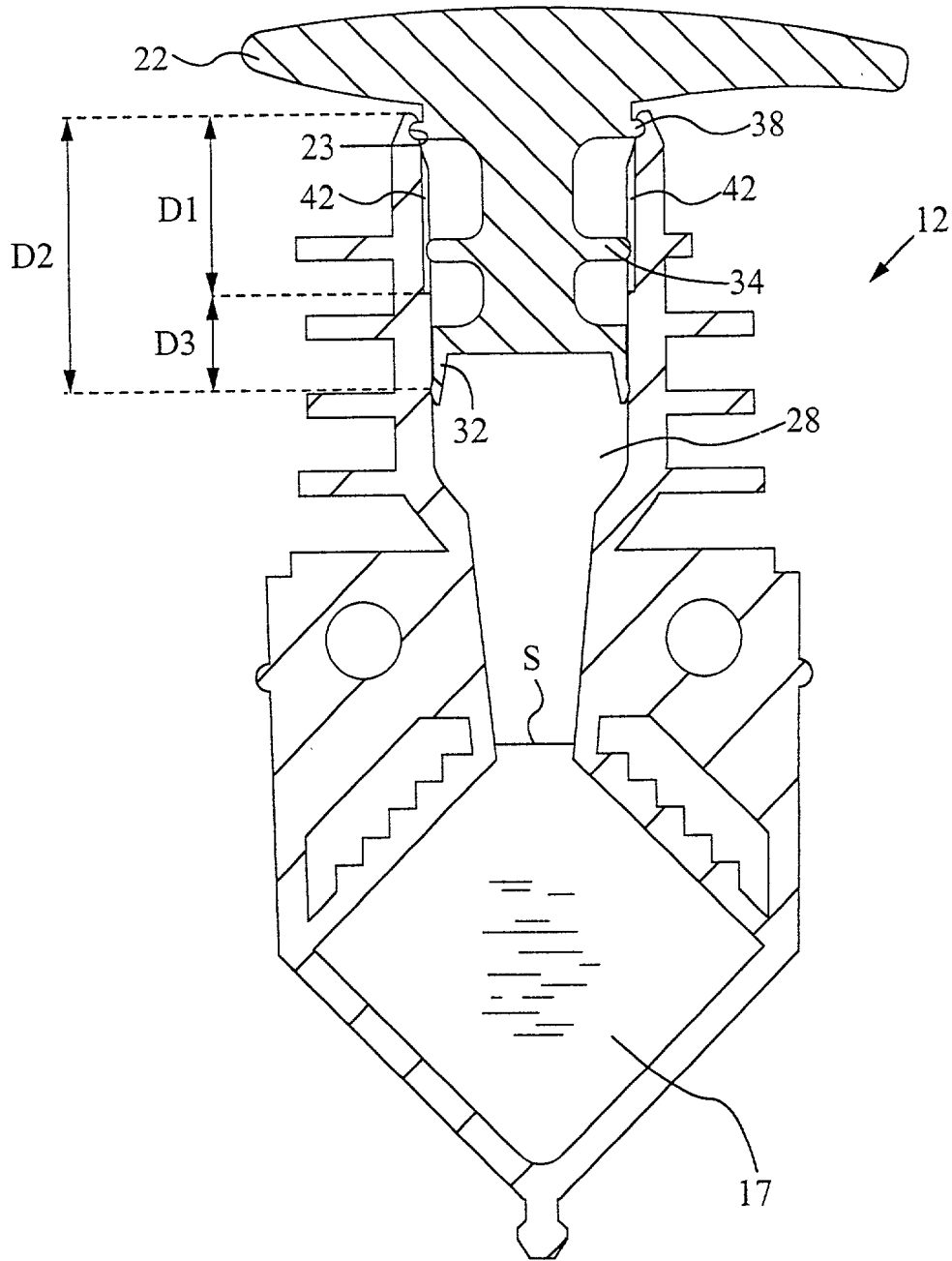


FIG. 7D

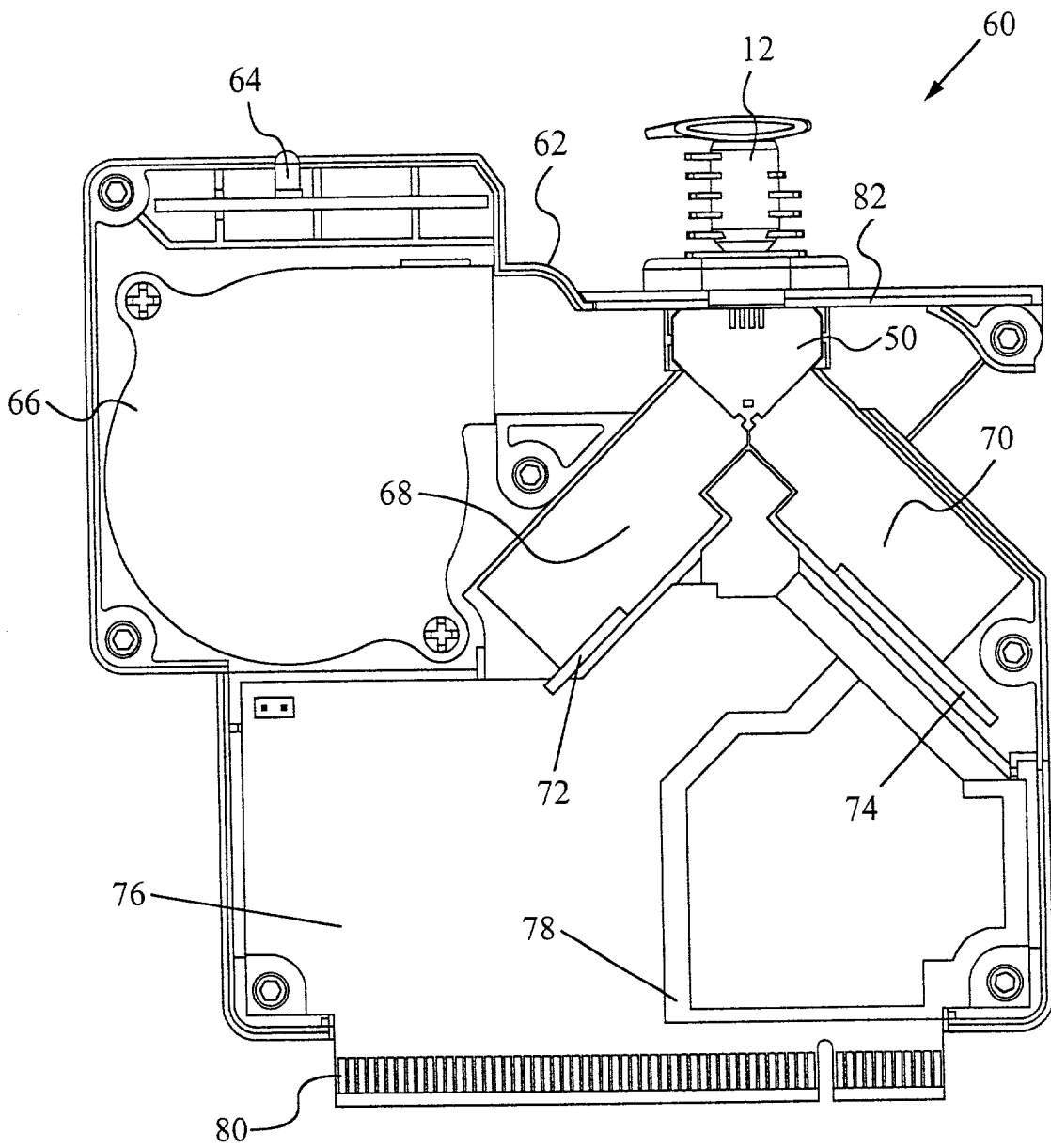


FIG. 8



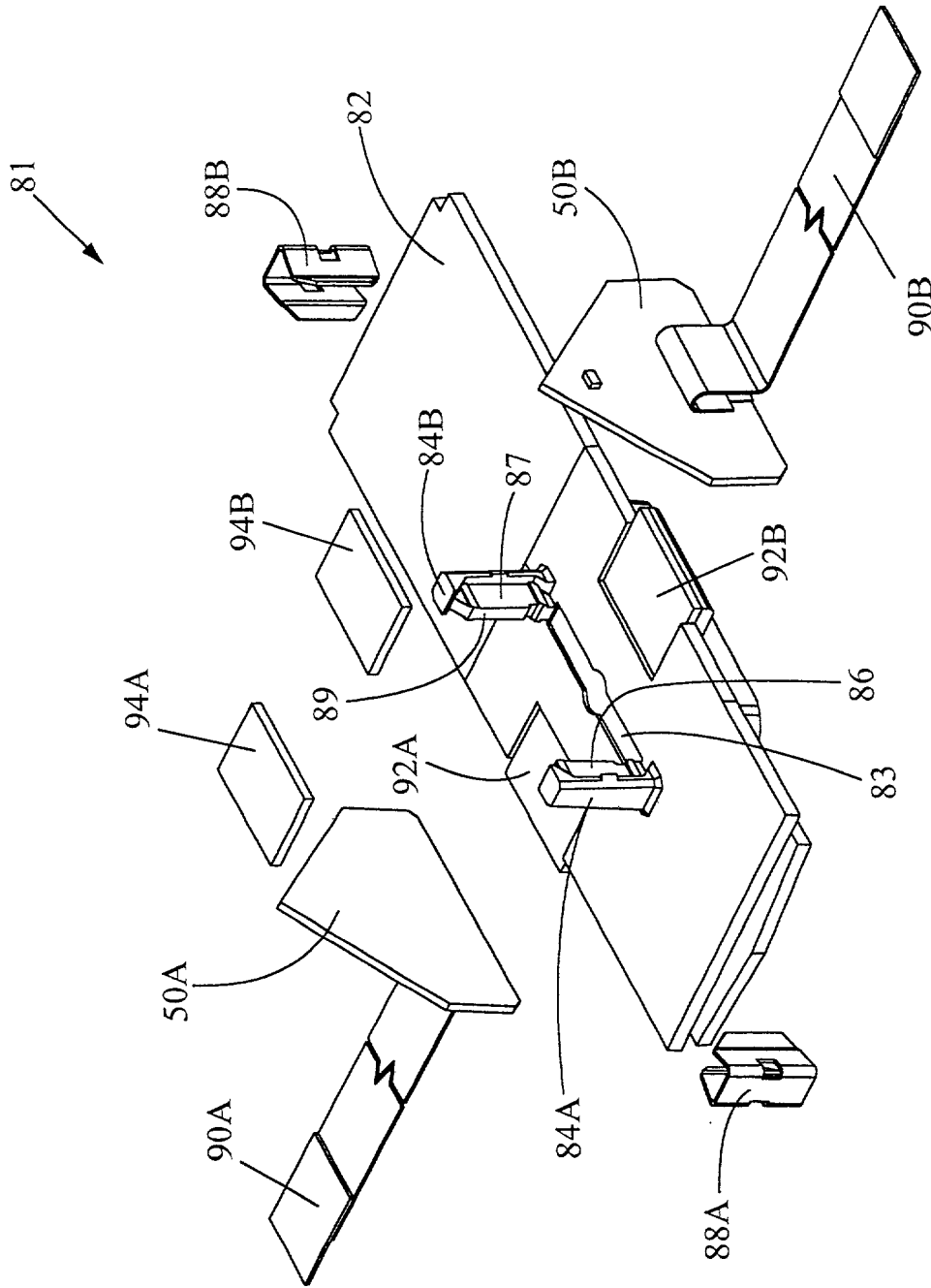


FIG. 9

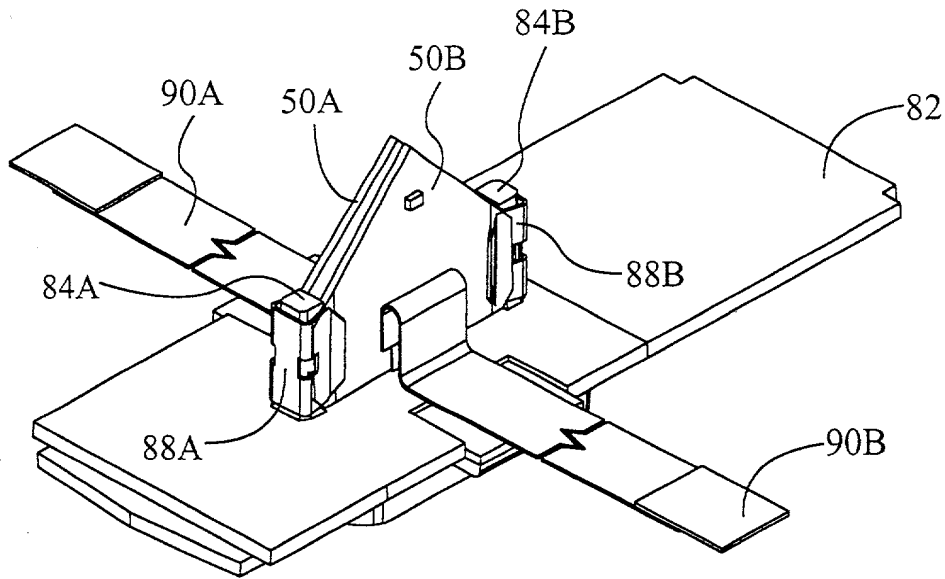


FIG. 10

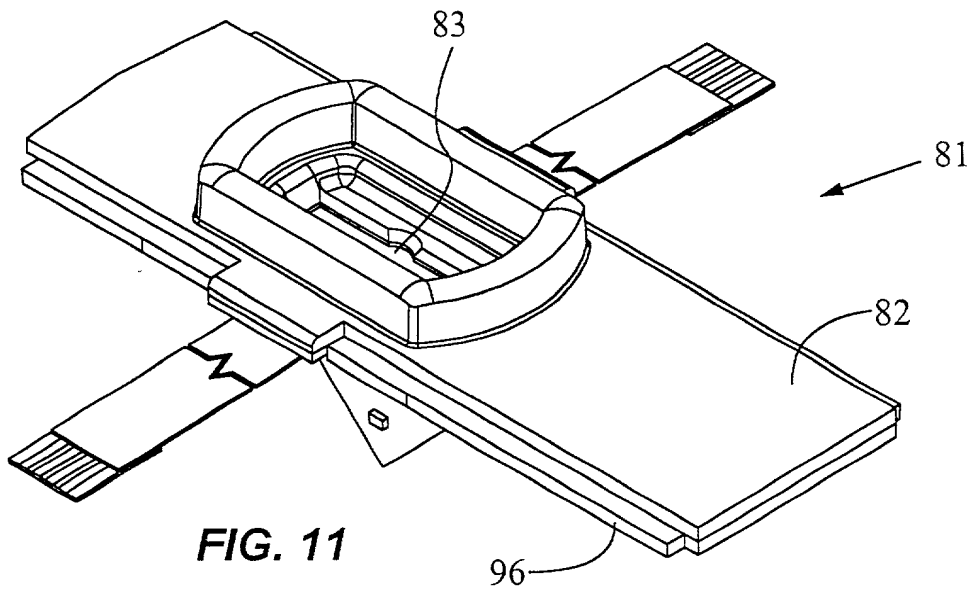


FIG. 11

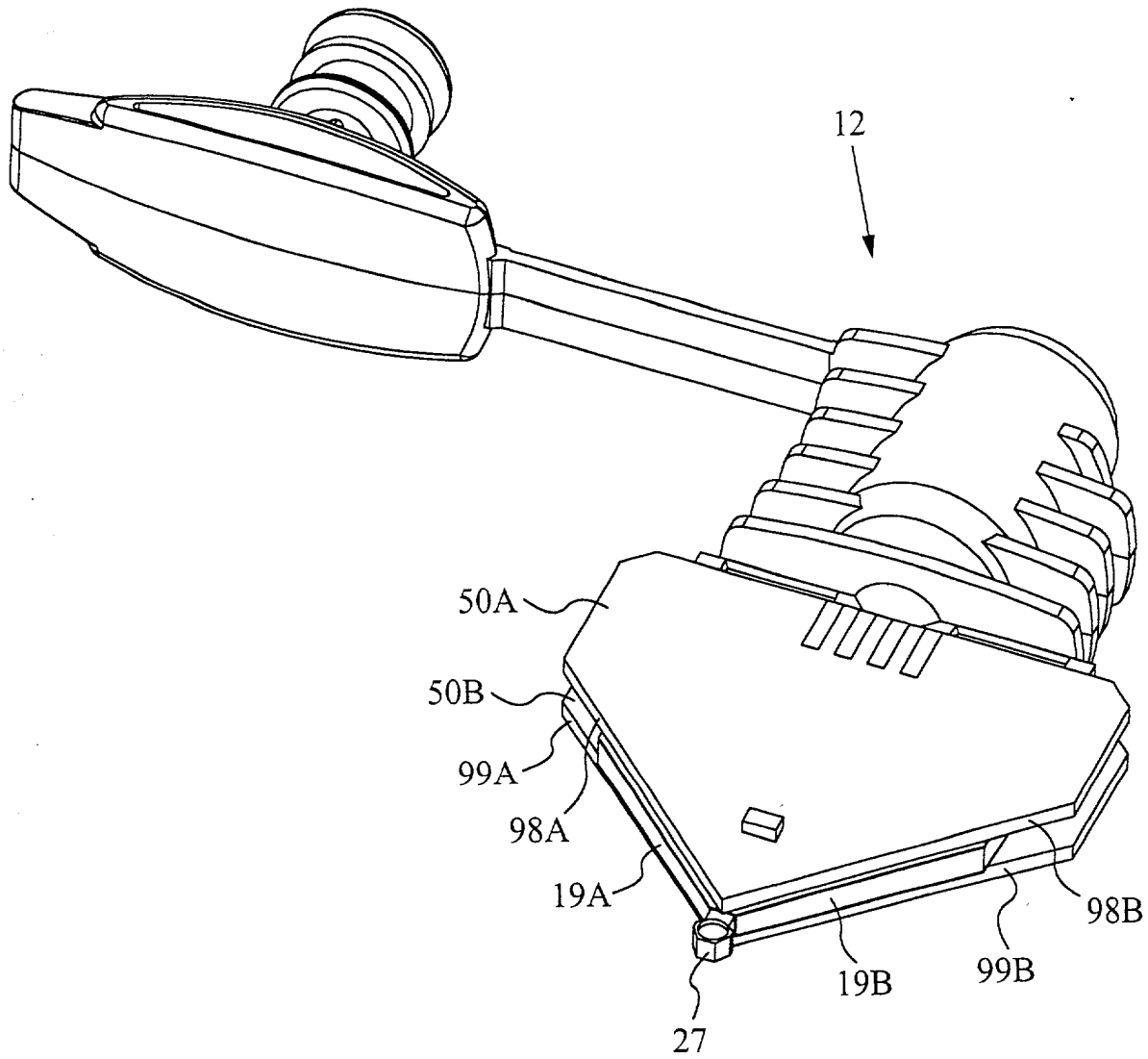


FIG. 12

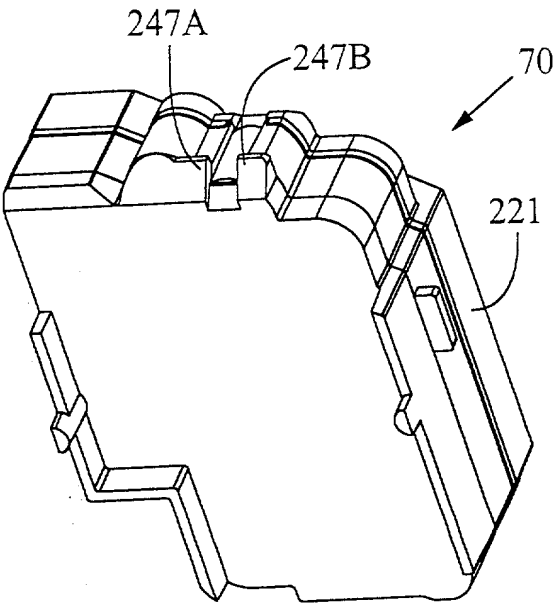


FIG. 13

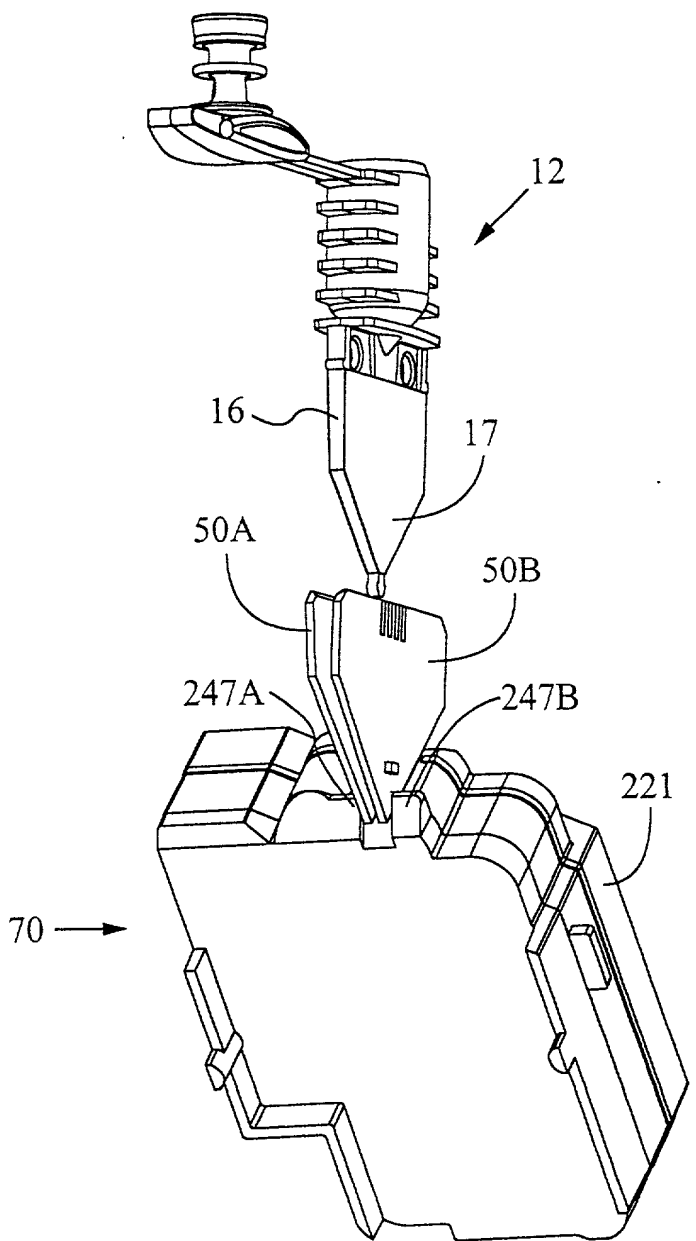


FIG. 14

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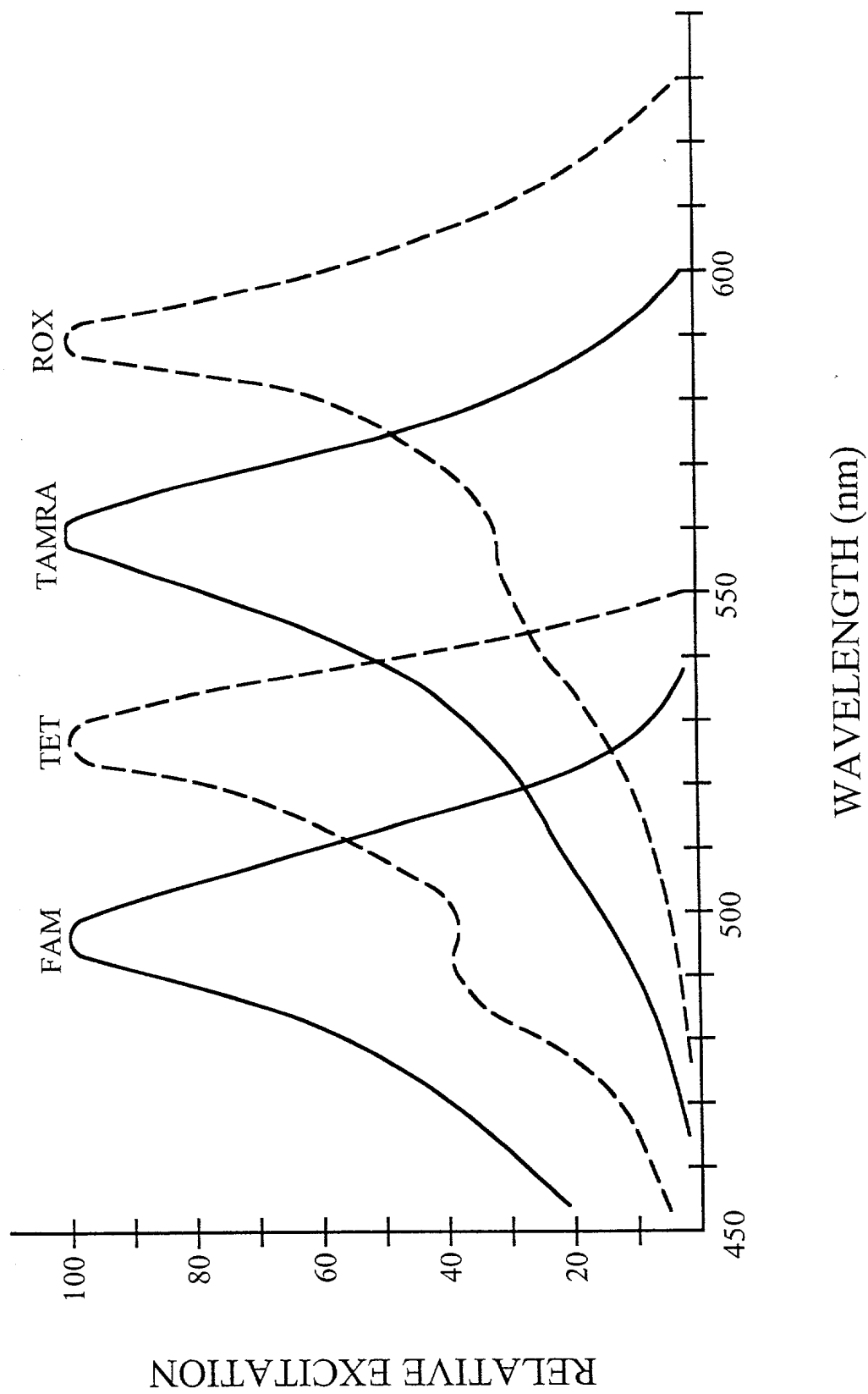


FIG. 15A

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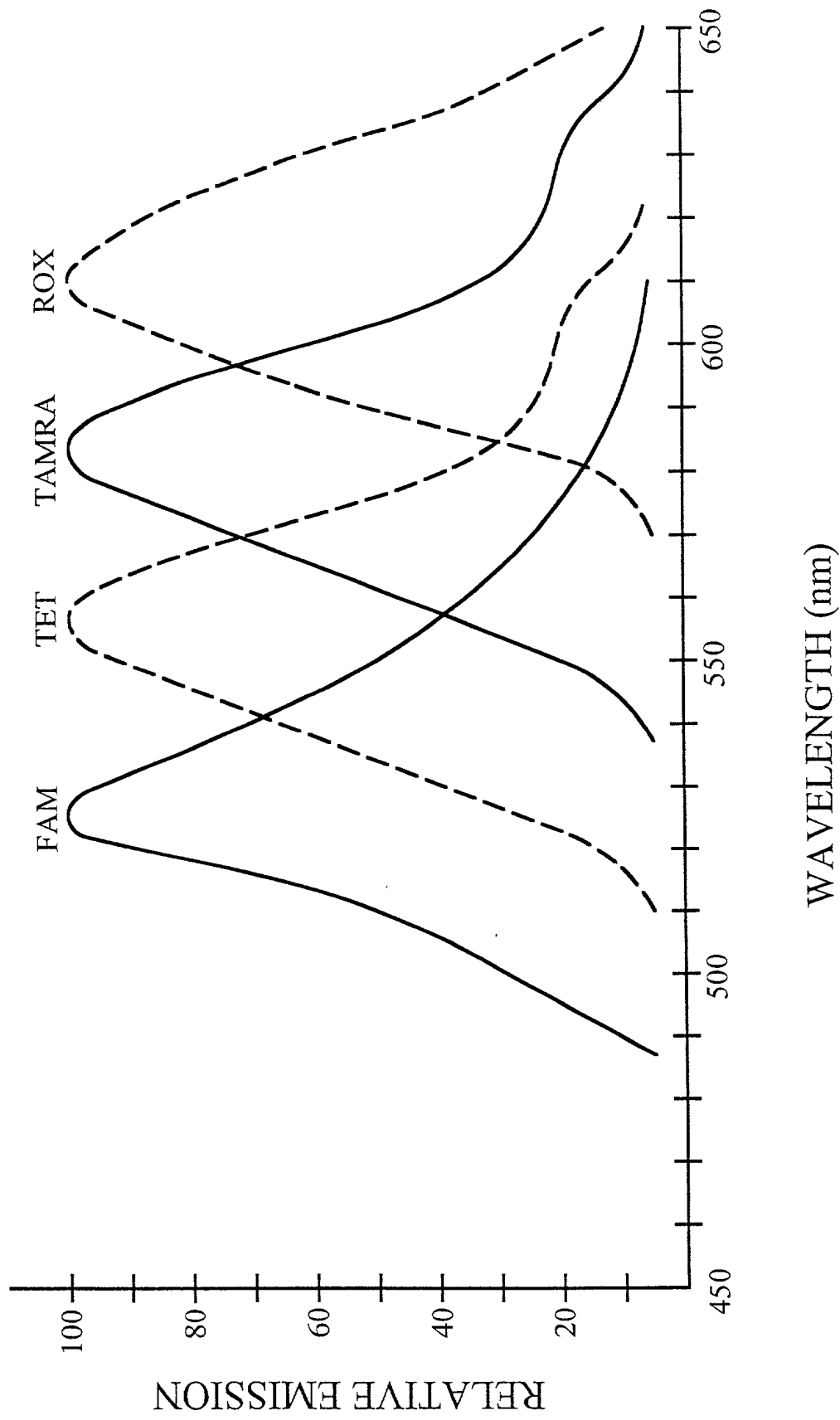


FIG. 15B

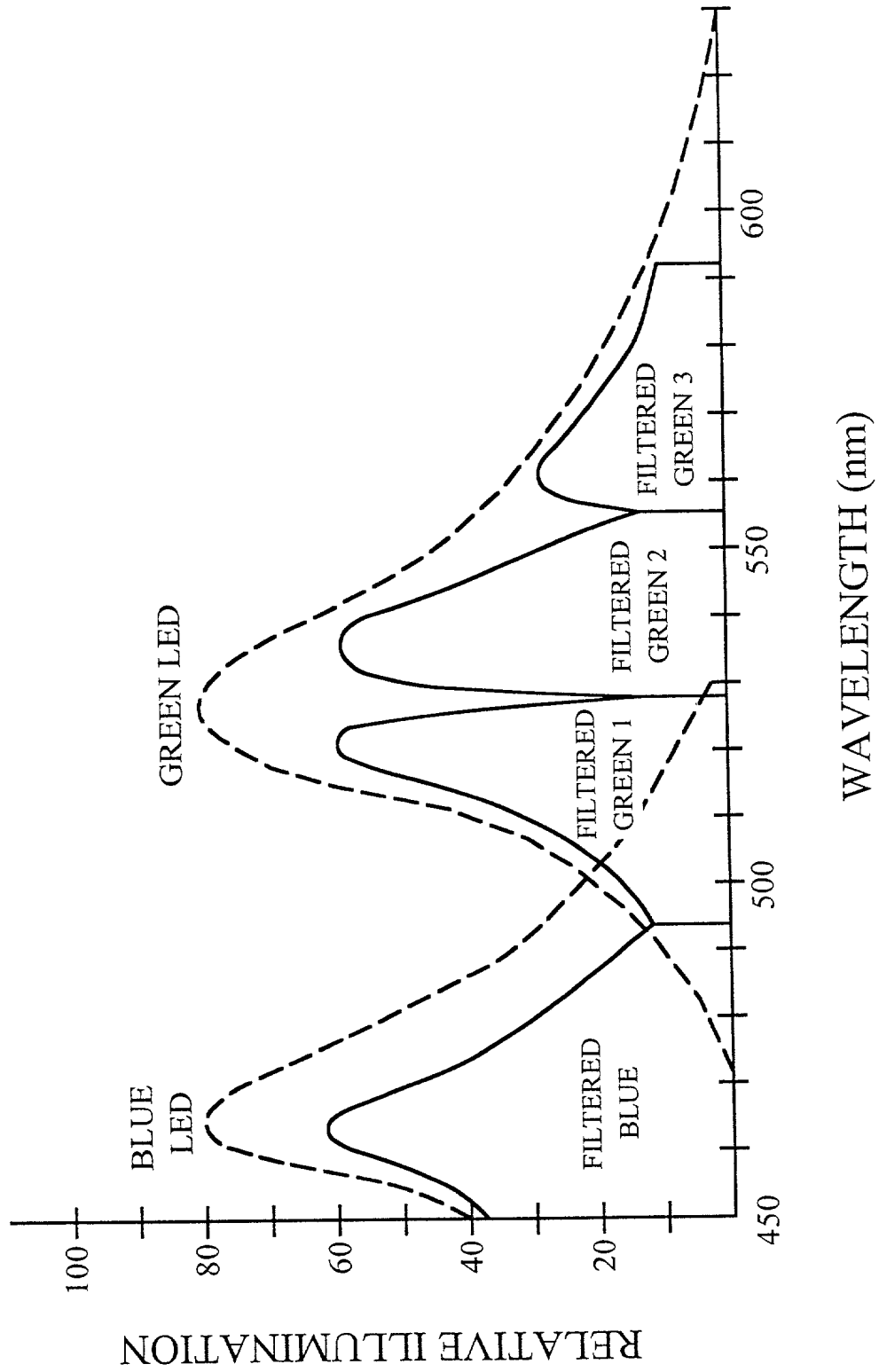
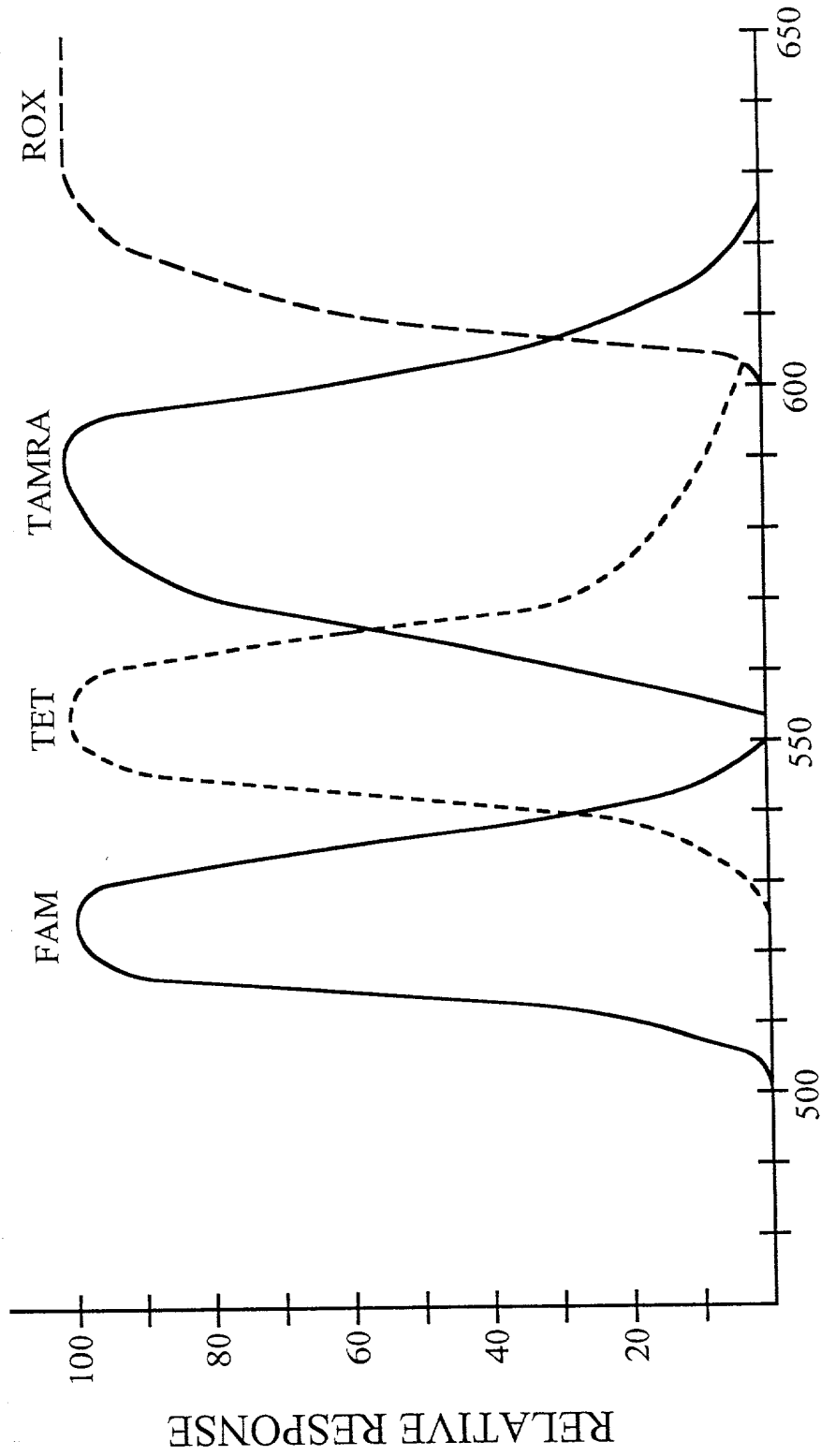


FIG. 15C



WAVELENGTH (nm)

FIG. 15D



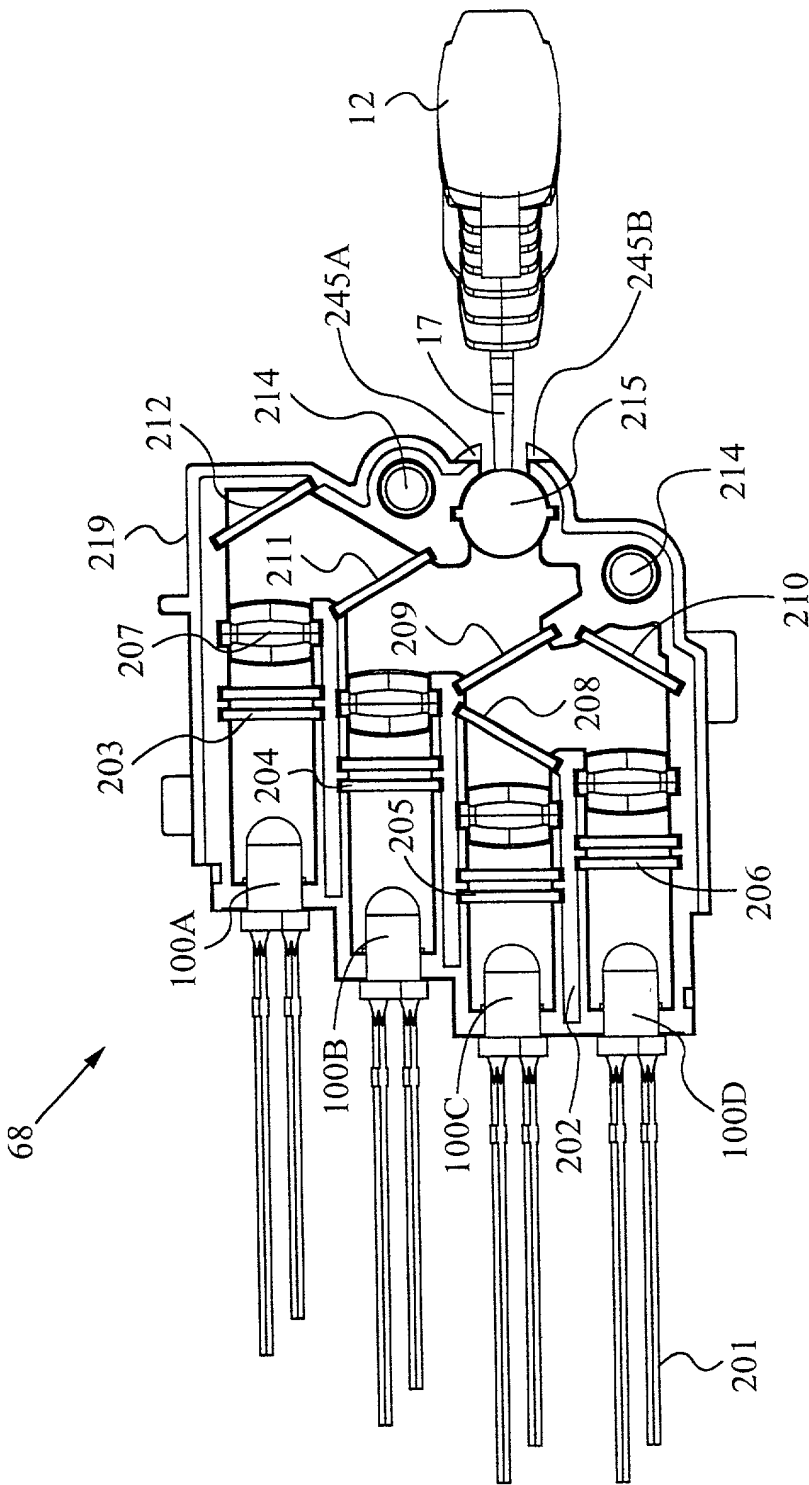


FIG. 16

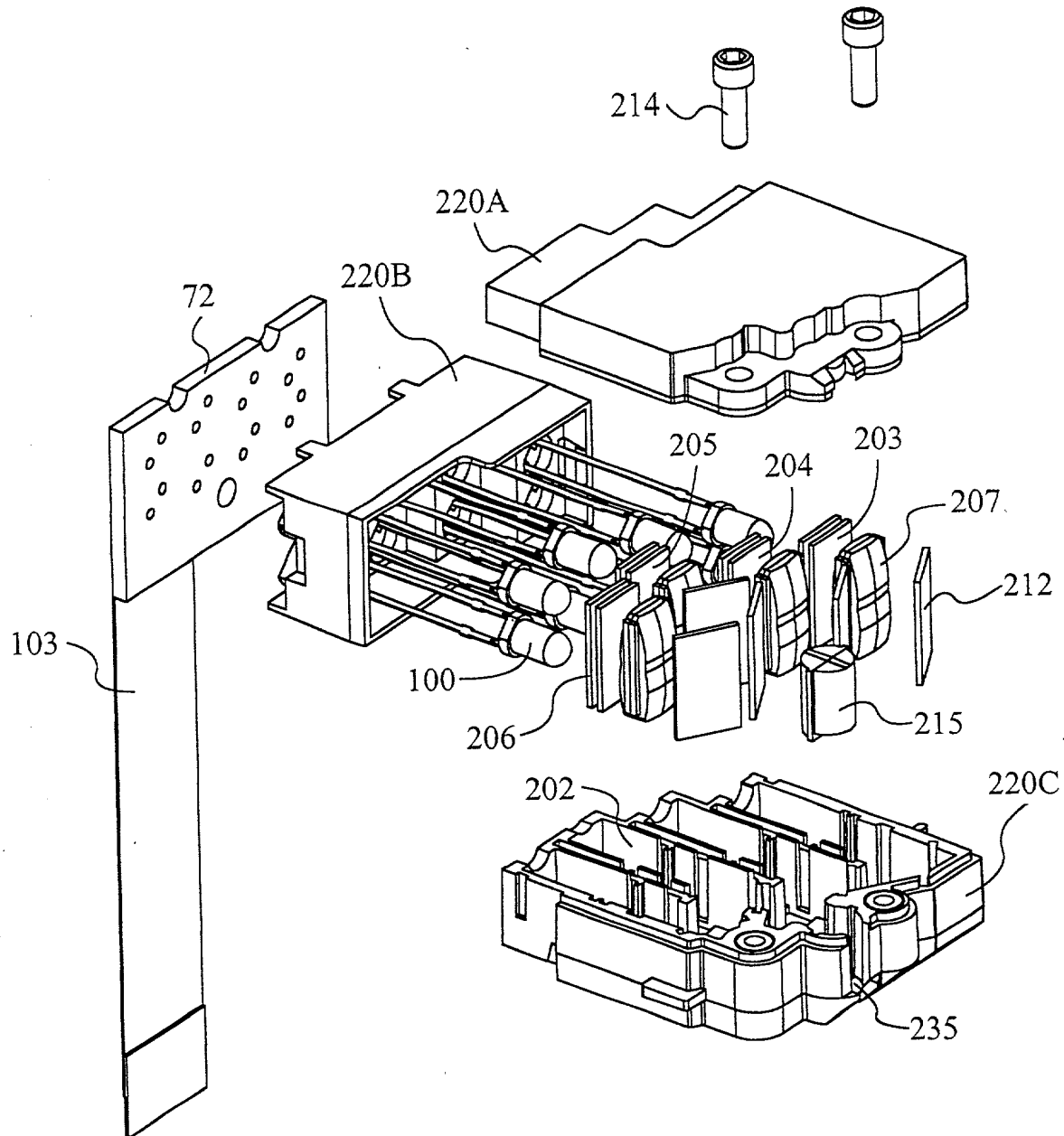


FIG. 17

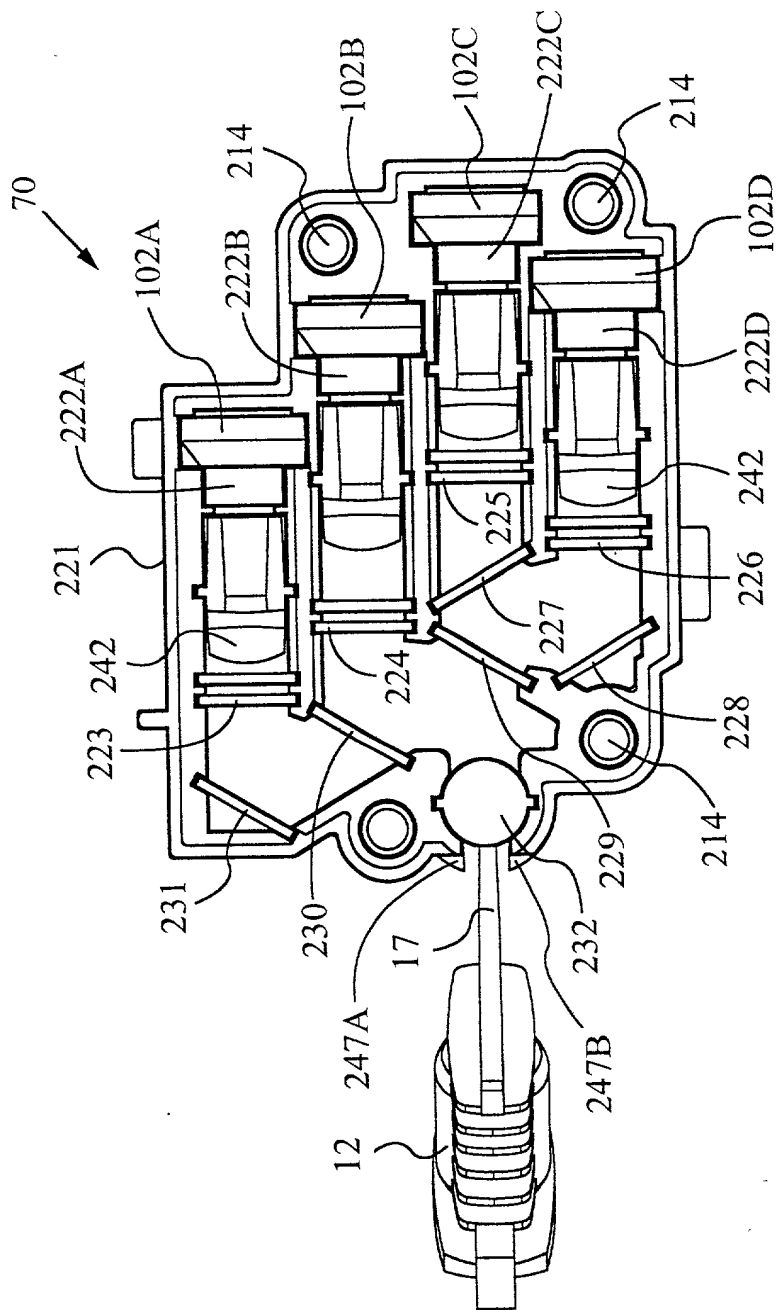


FIG. 18

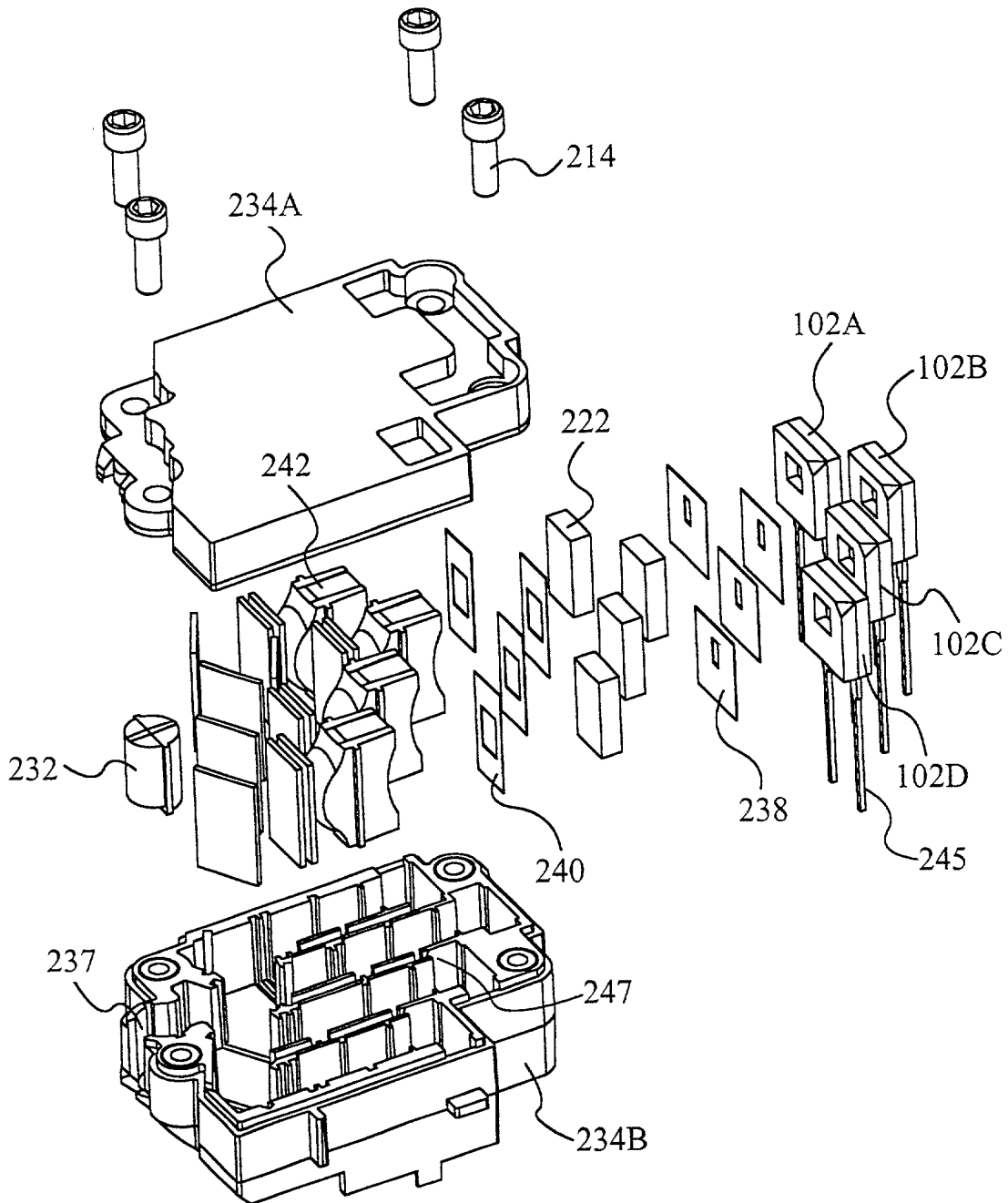


FIG. 19

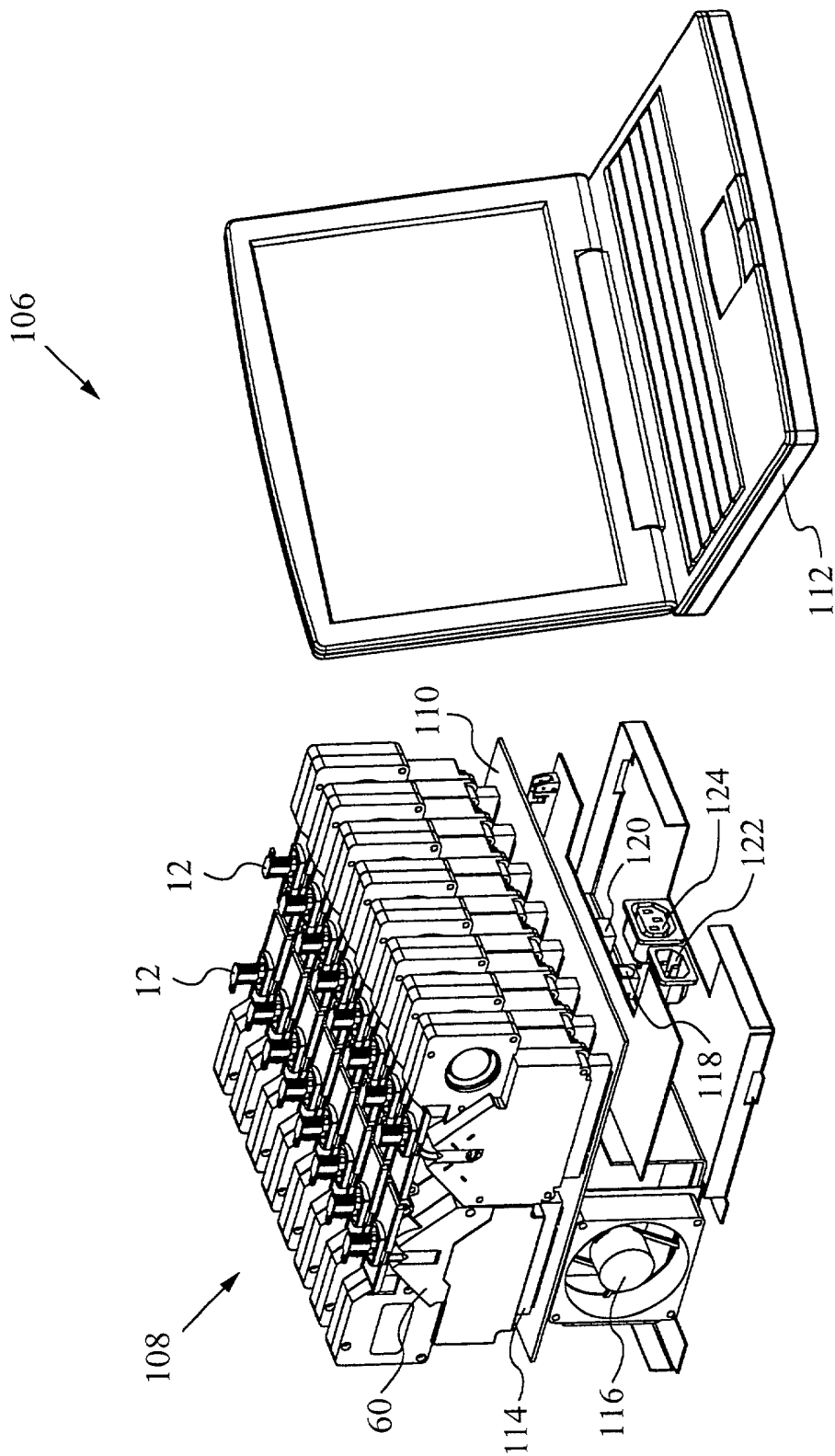


FIG. 20

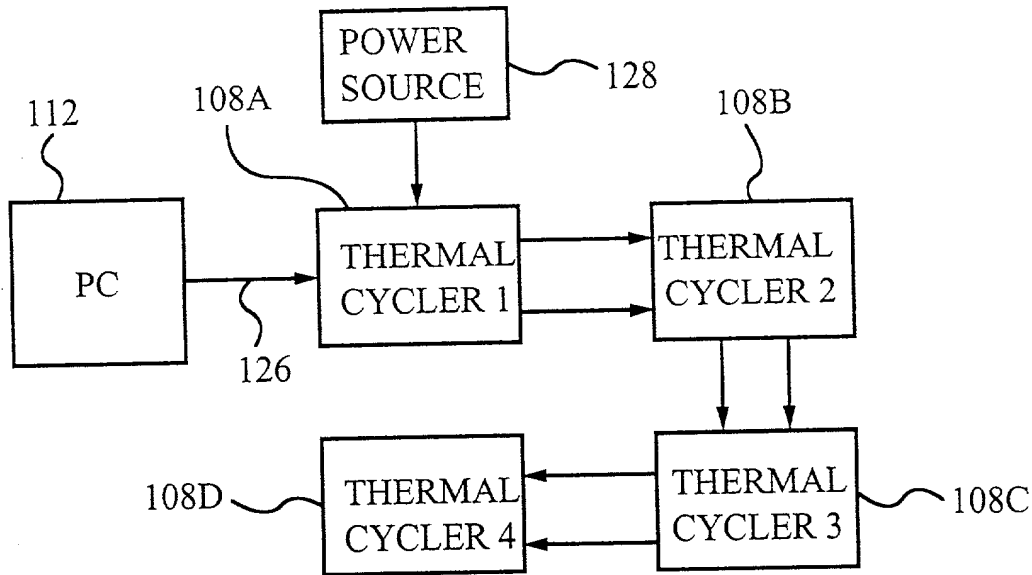


FIG. 21

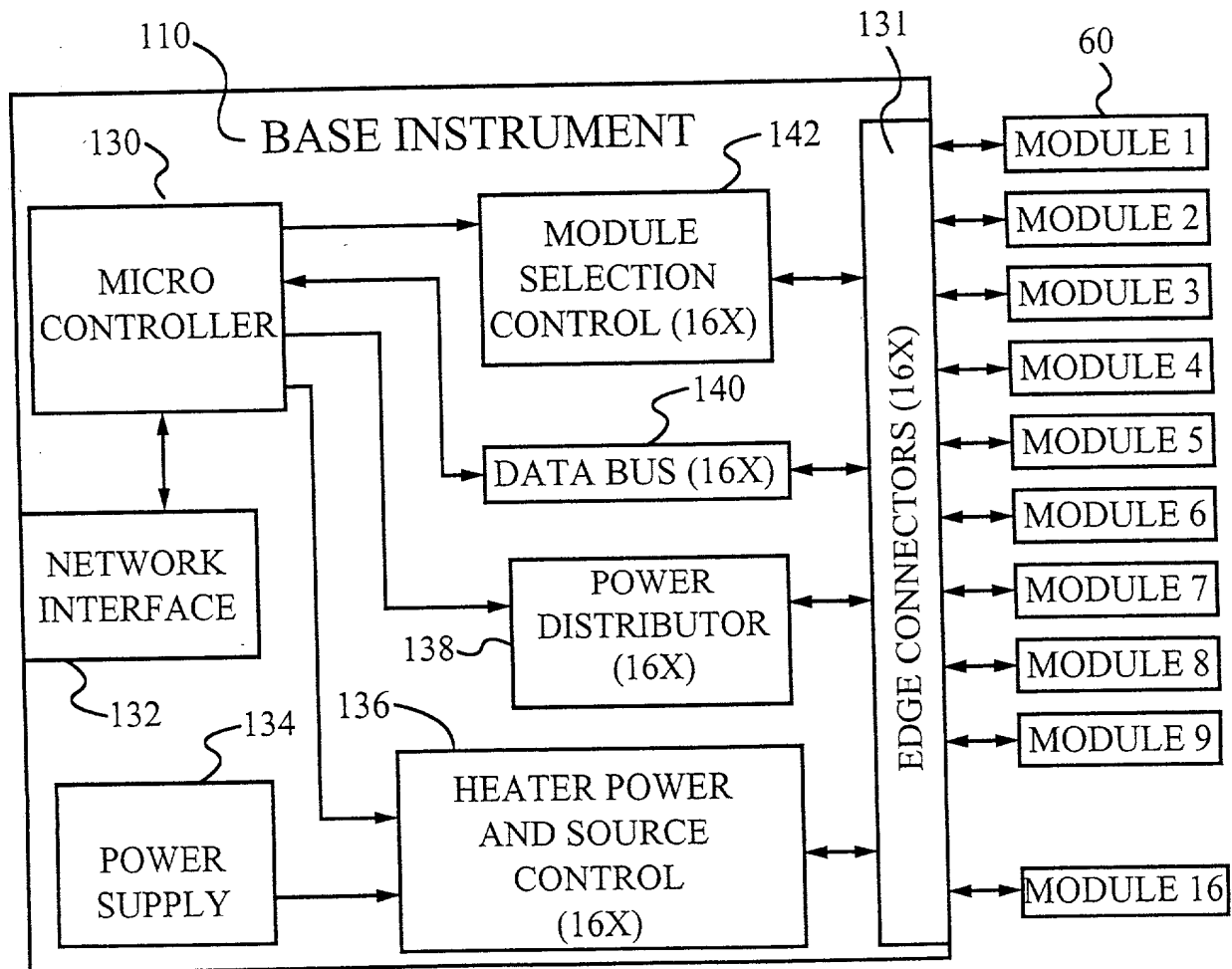


FIG. 22

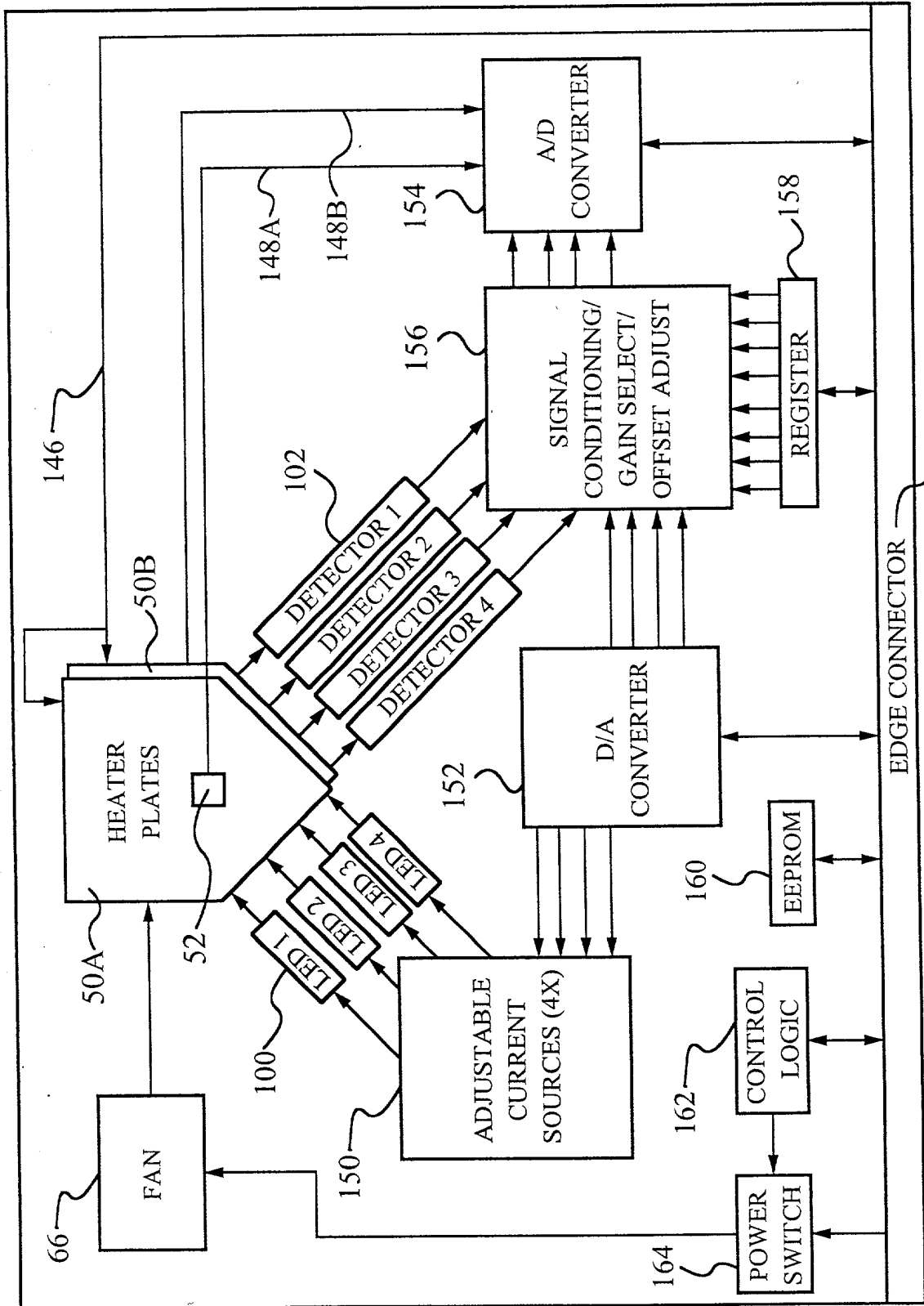
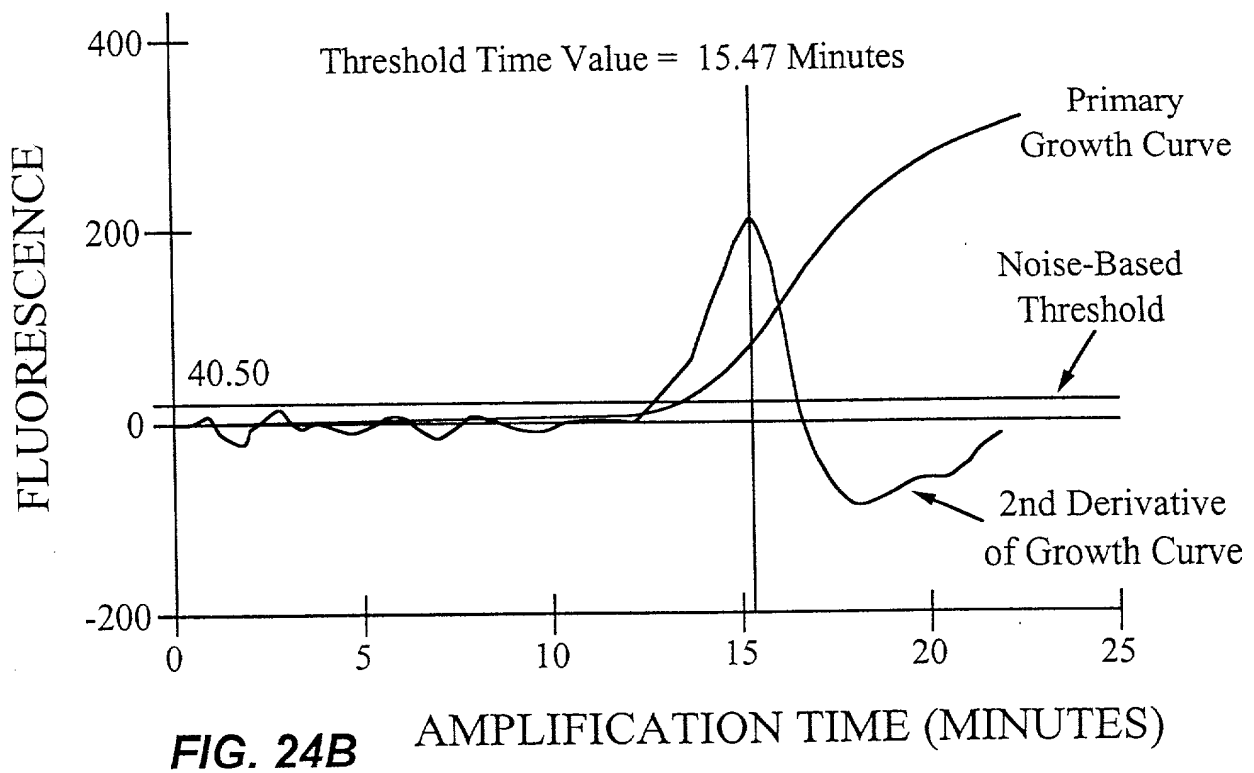
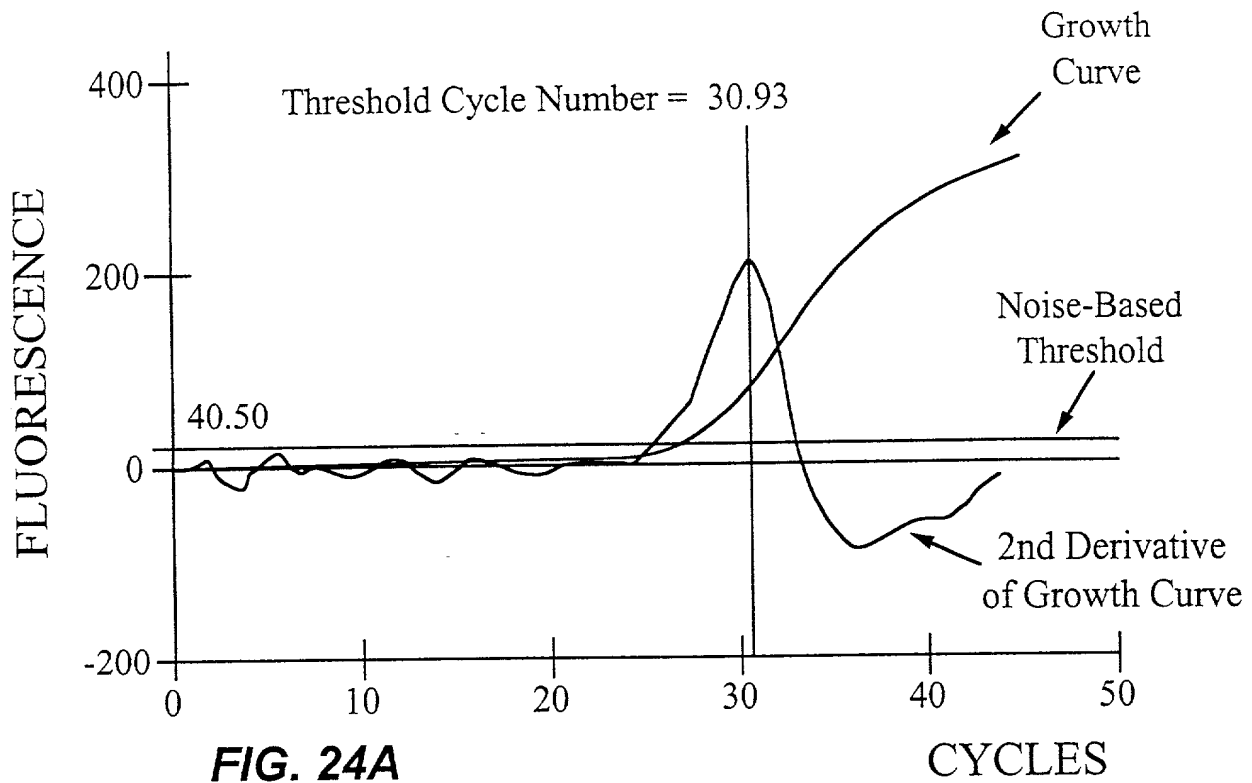


FIG. 23

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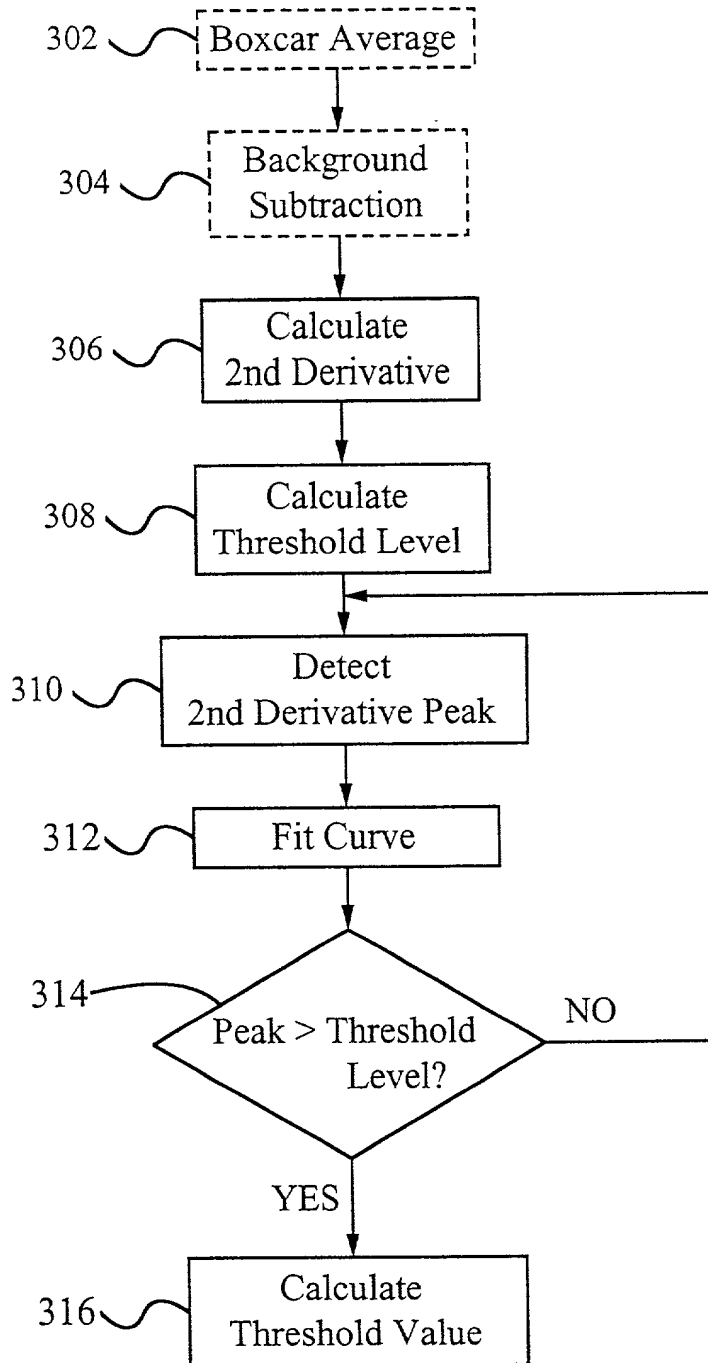
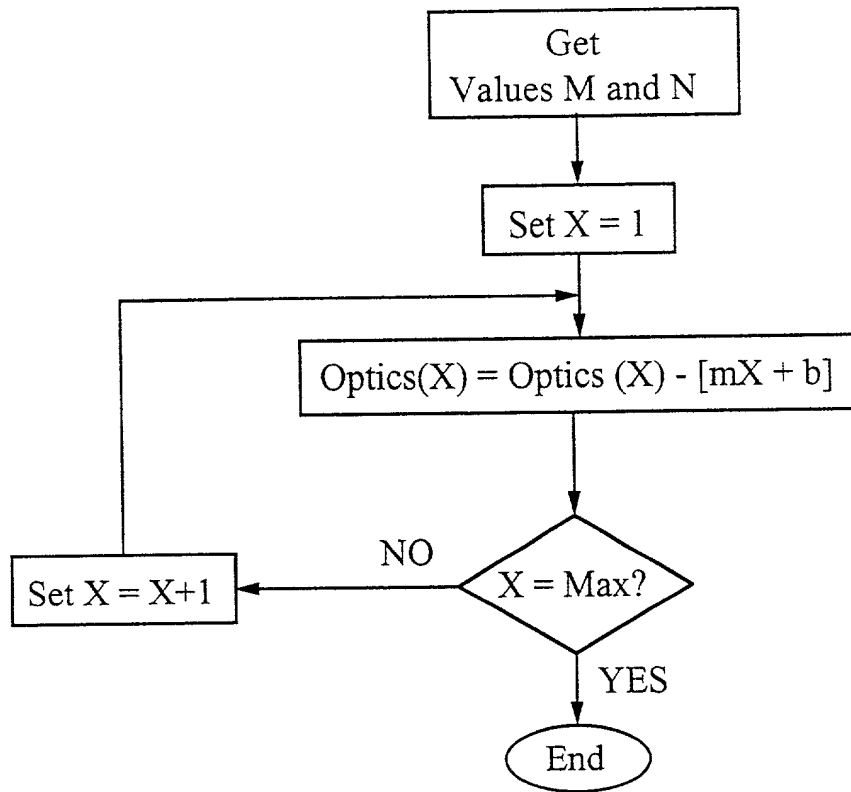
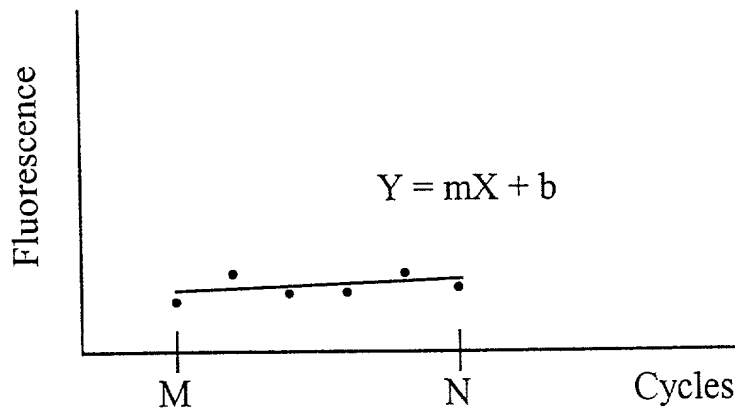


FIG. 25

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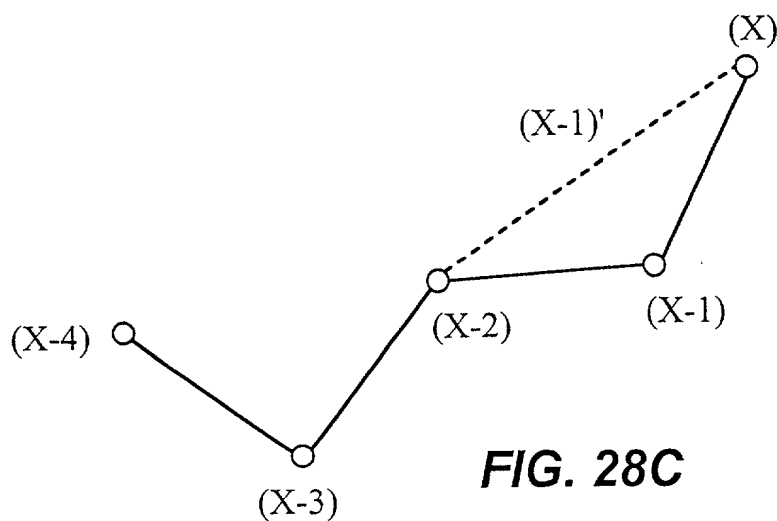
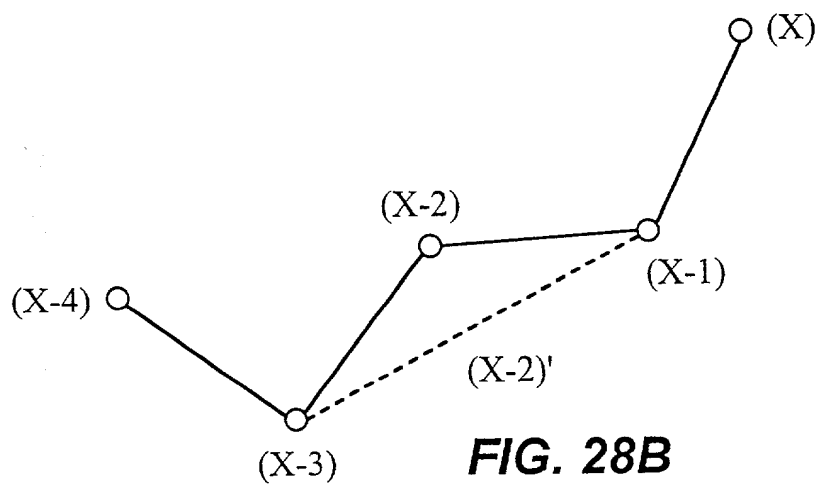
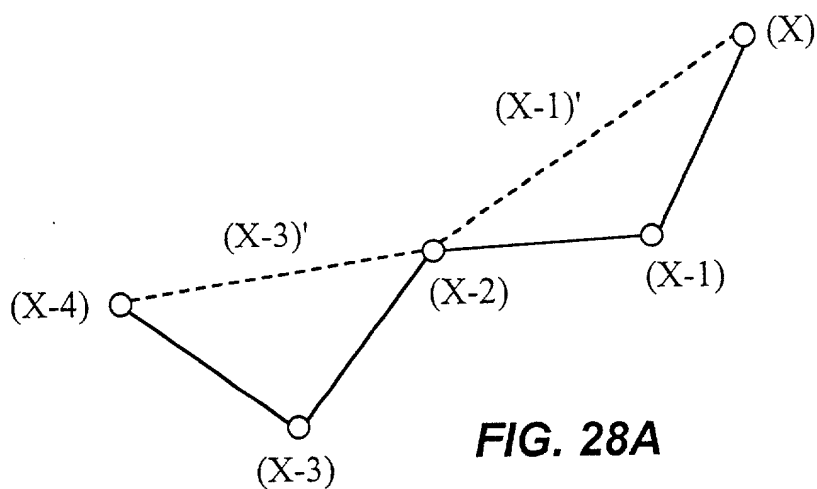


**FIG. 26**



**FIG. 27**

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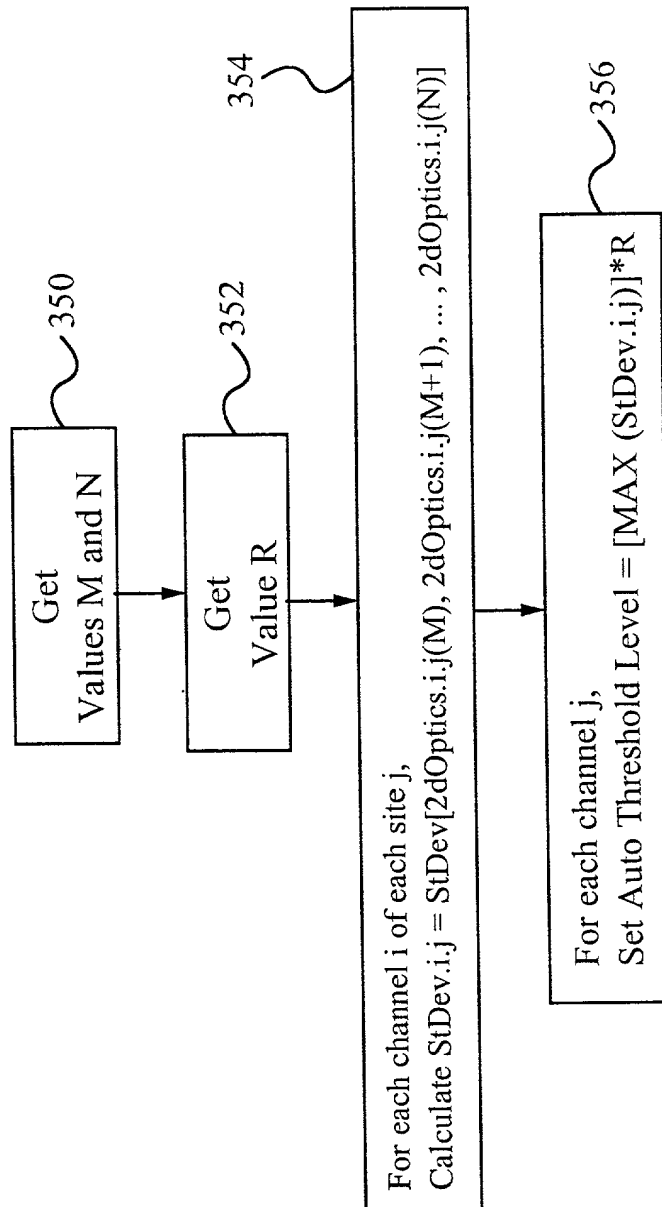
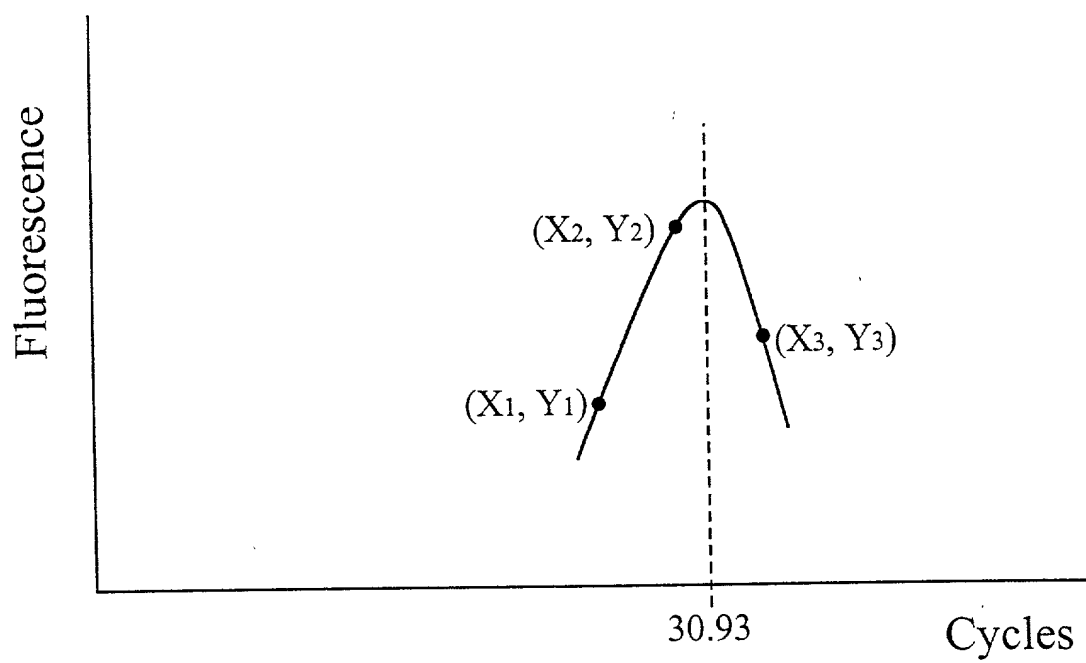


FIG. 29

**FIG. 30**

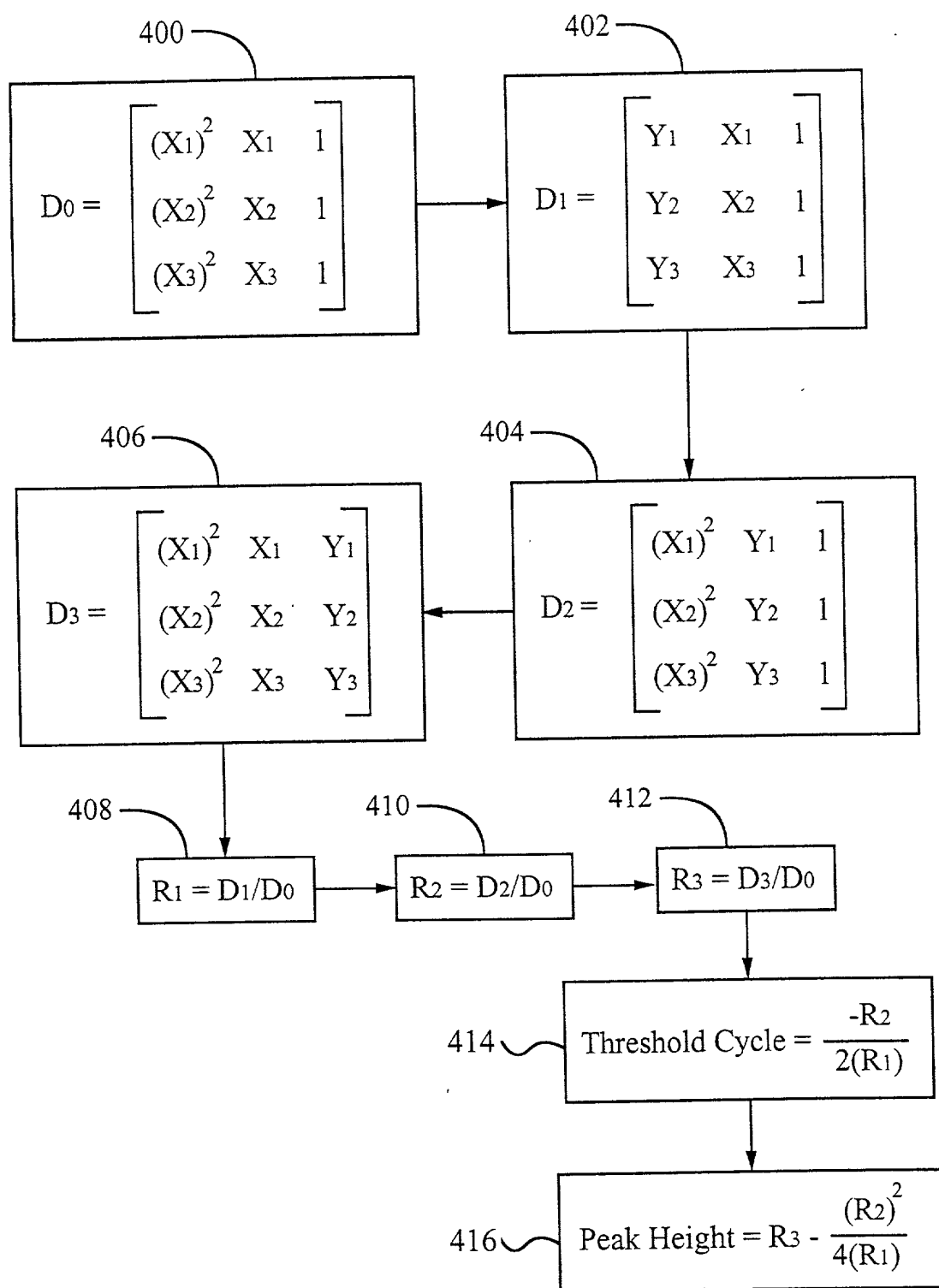
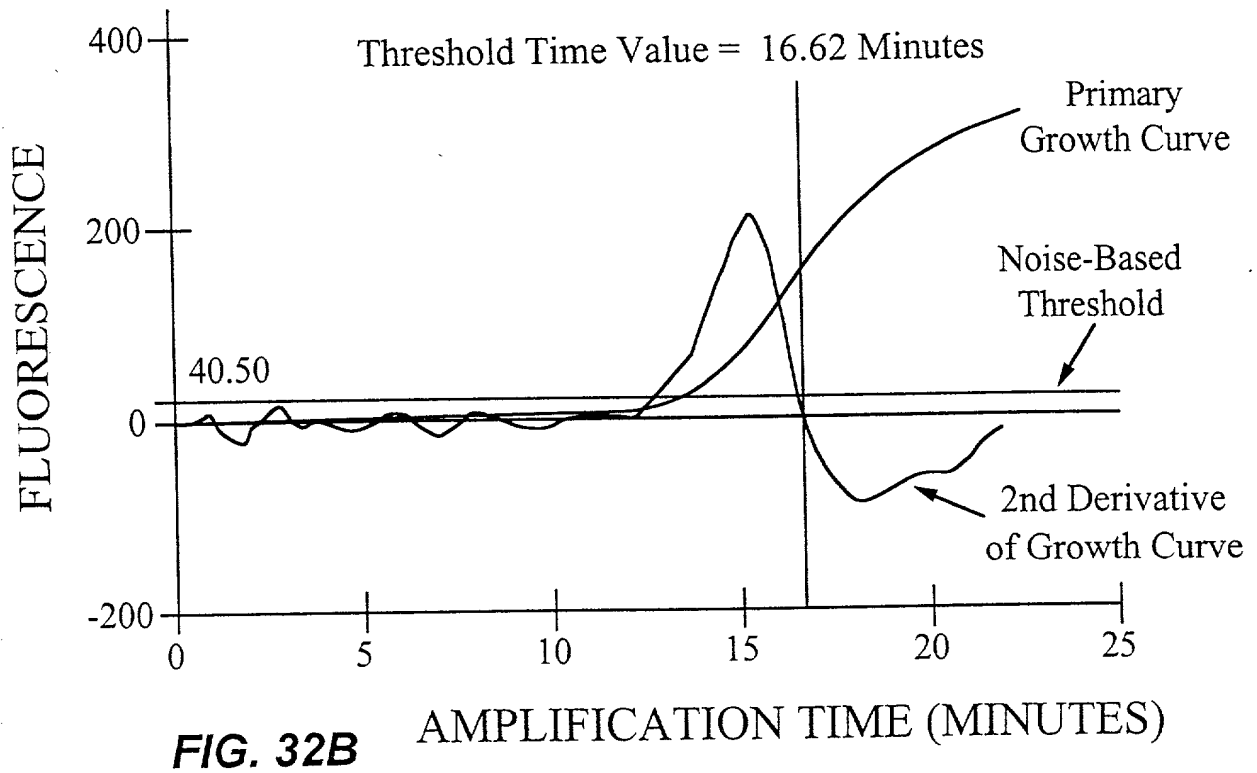
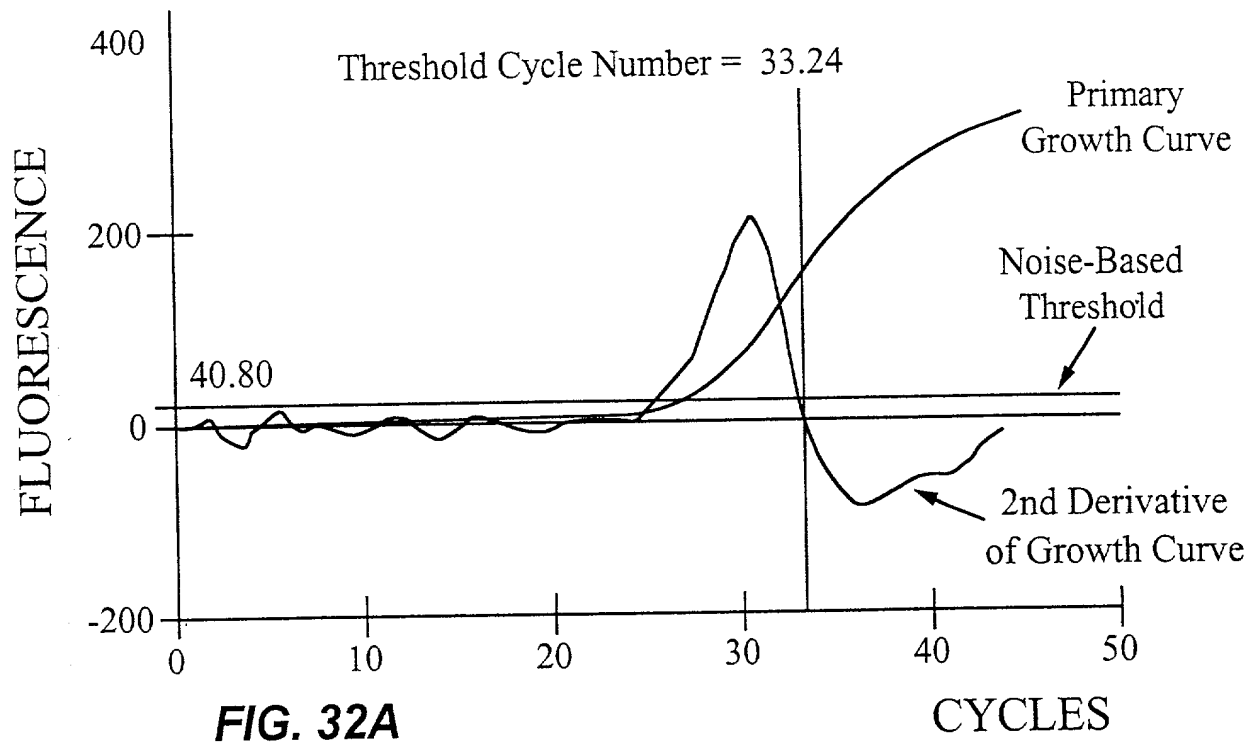
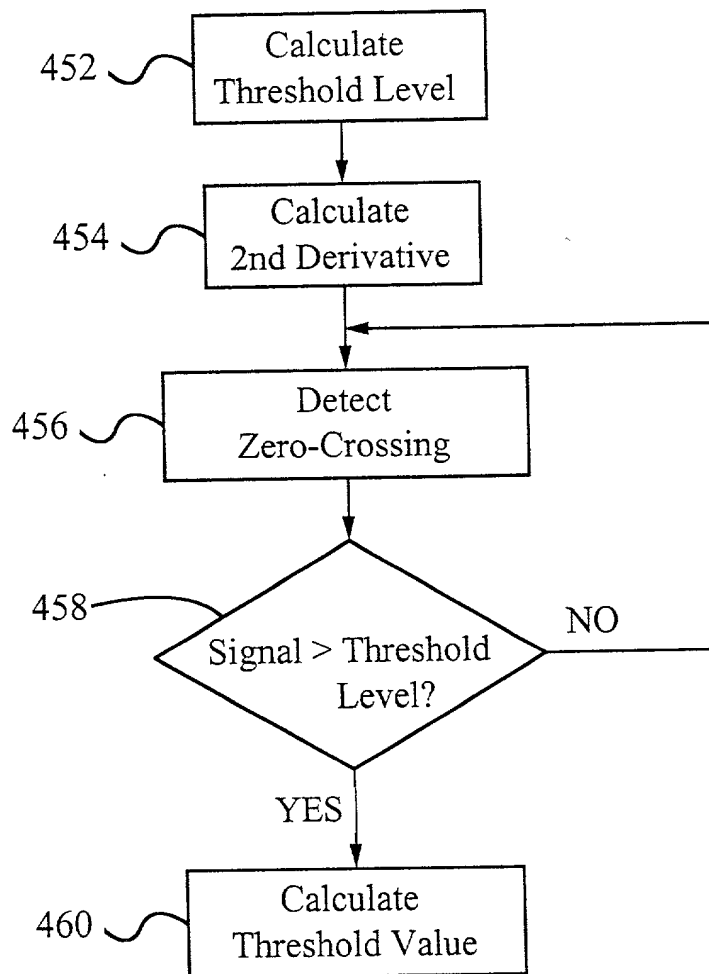
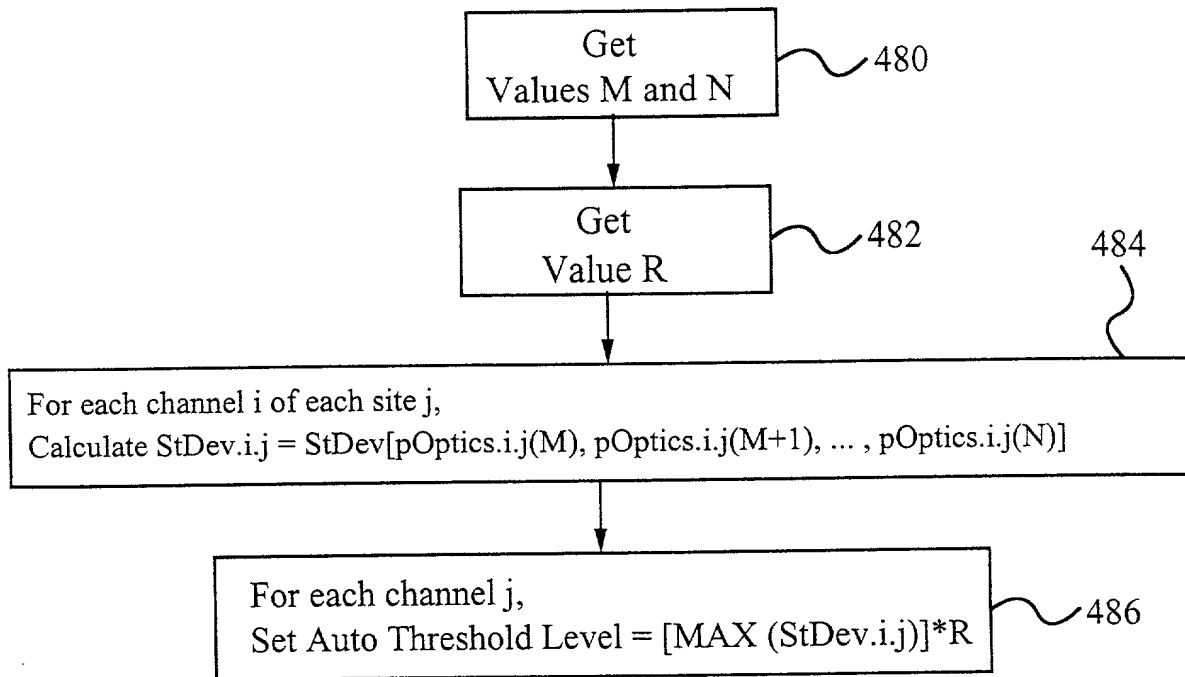


FIG. 31



**FIG. 33**



**FIG. 34**

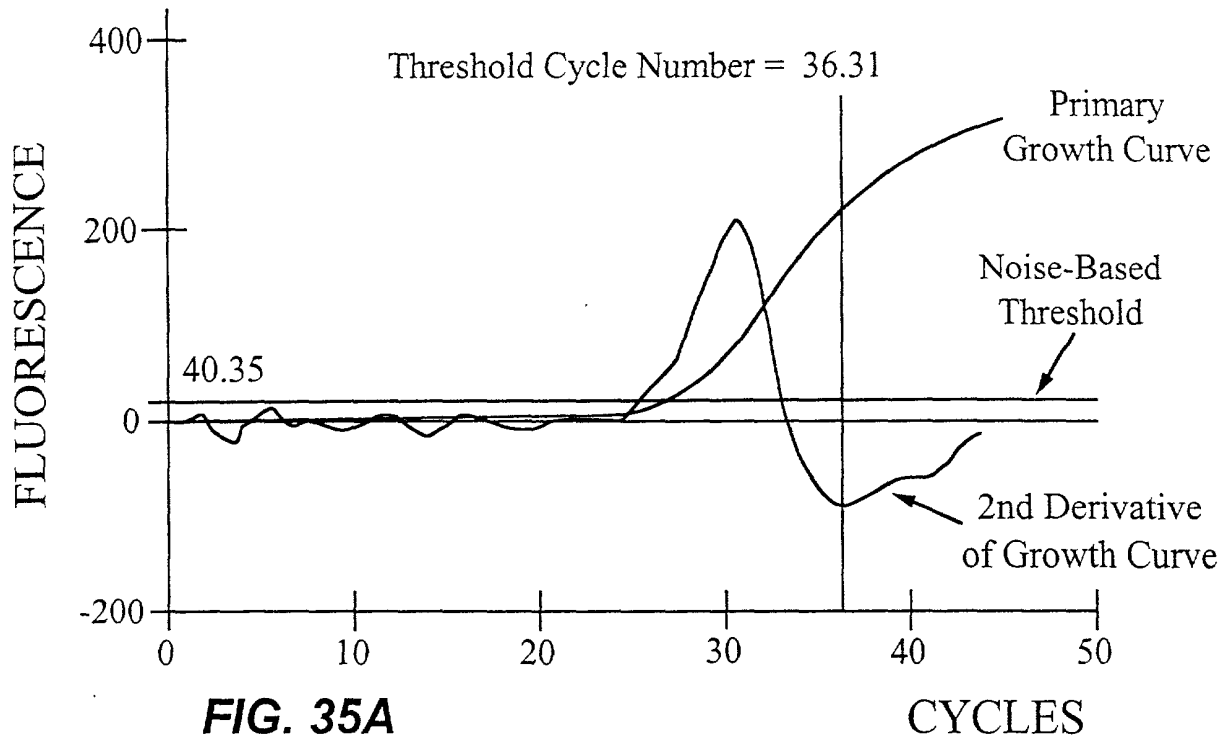


FIG. 35A

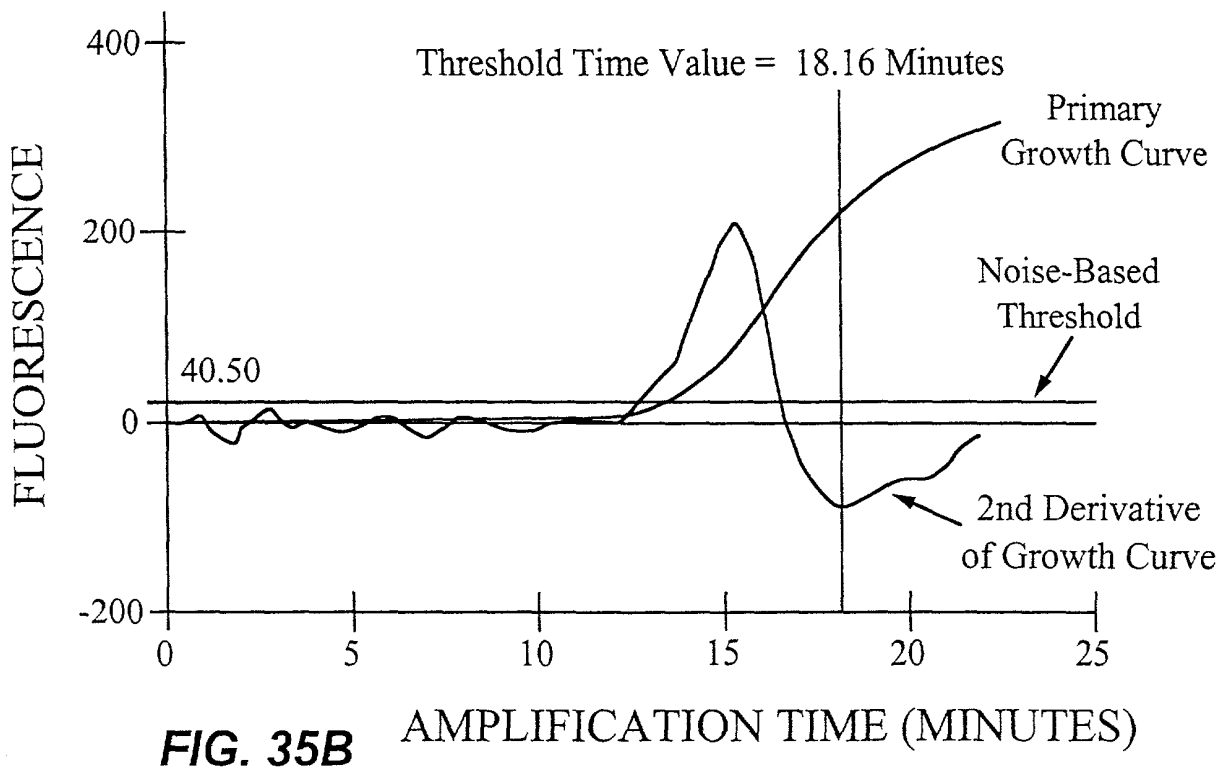


FIG. 35B

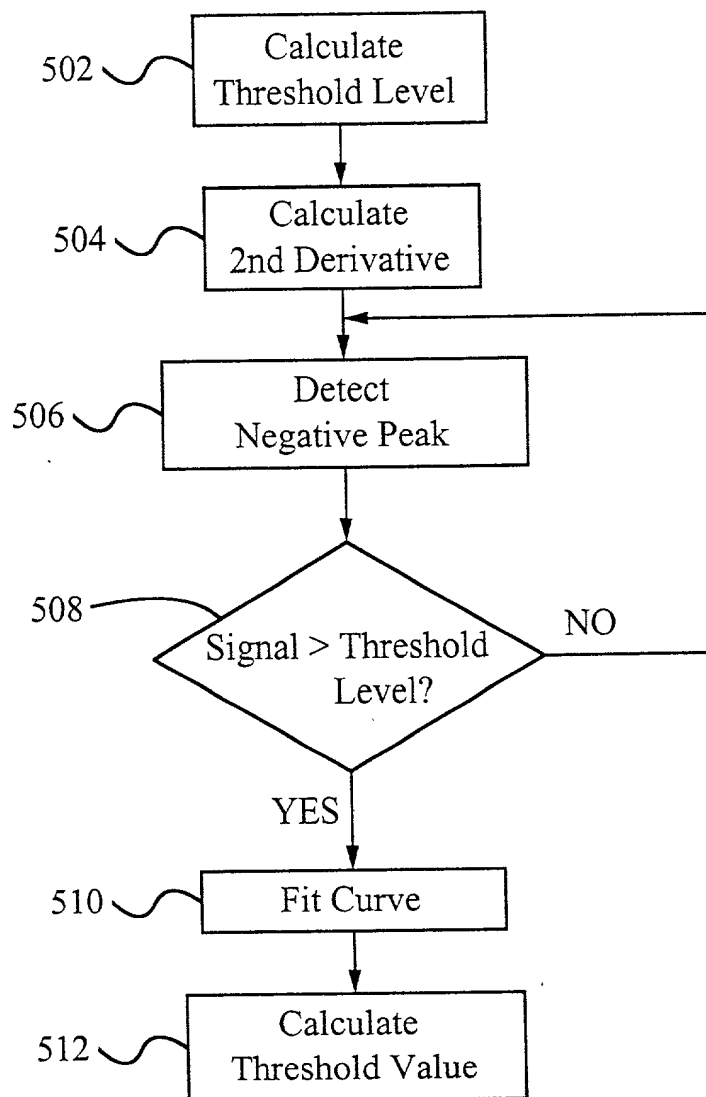
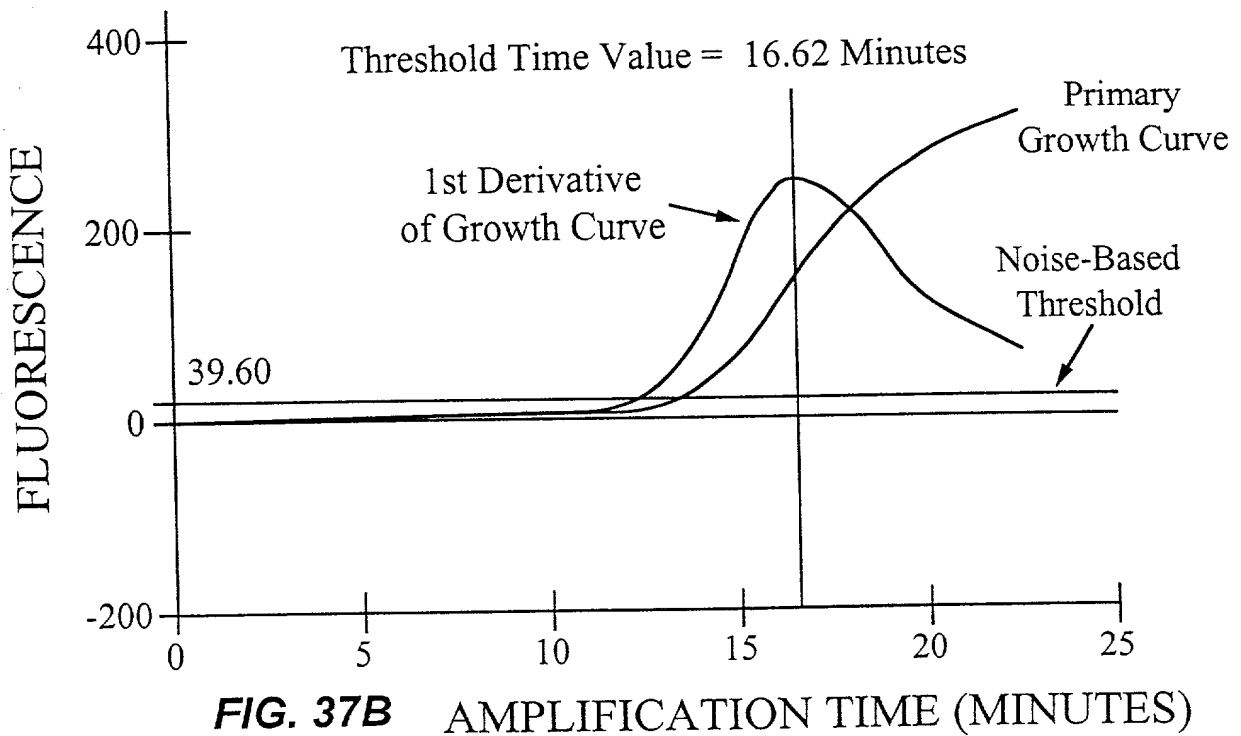
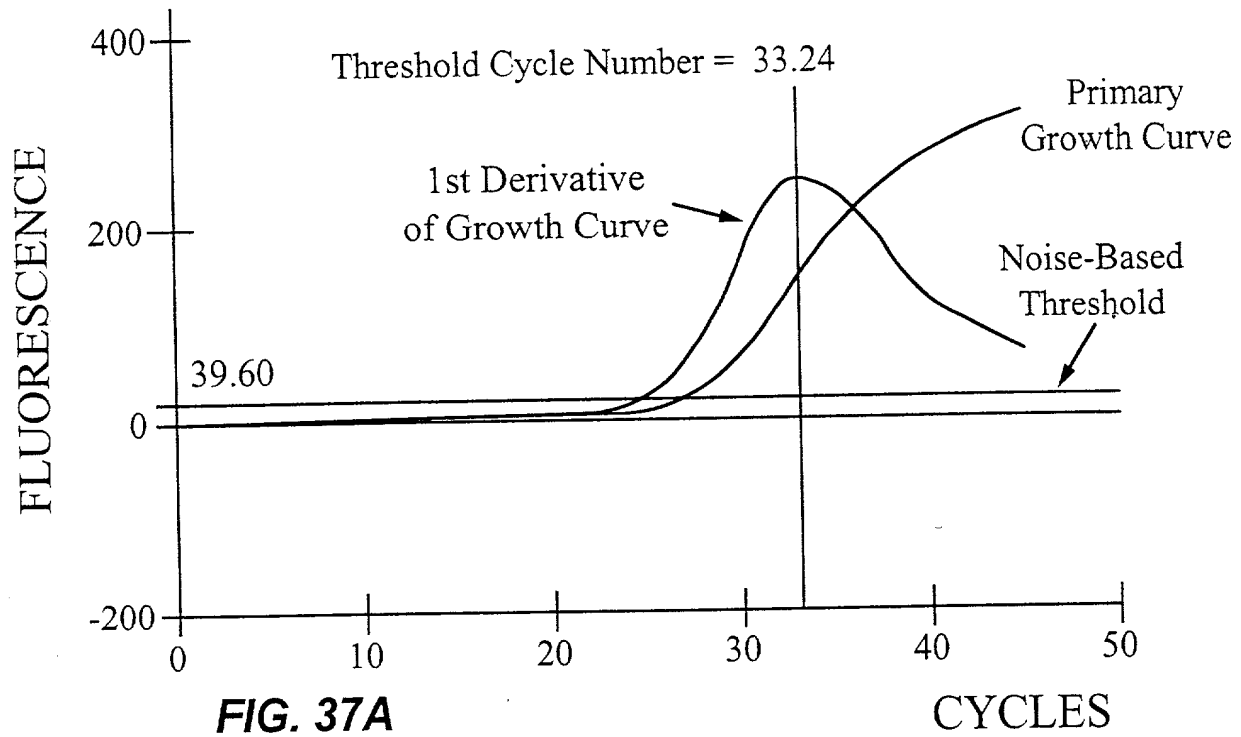


FIG. 36



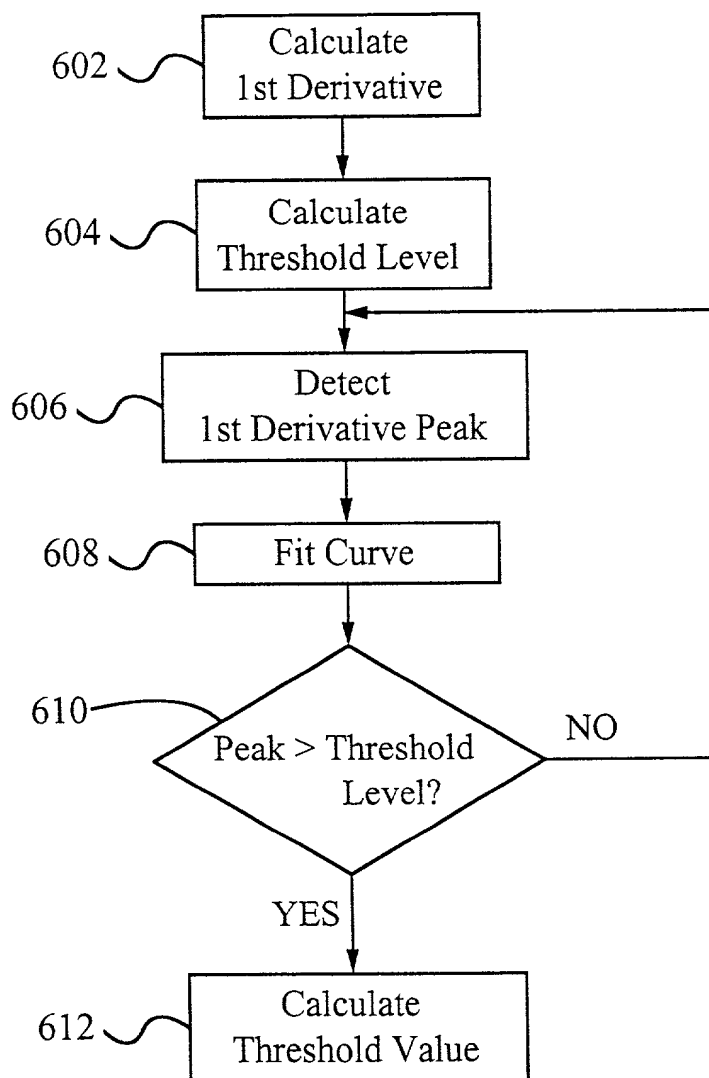
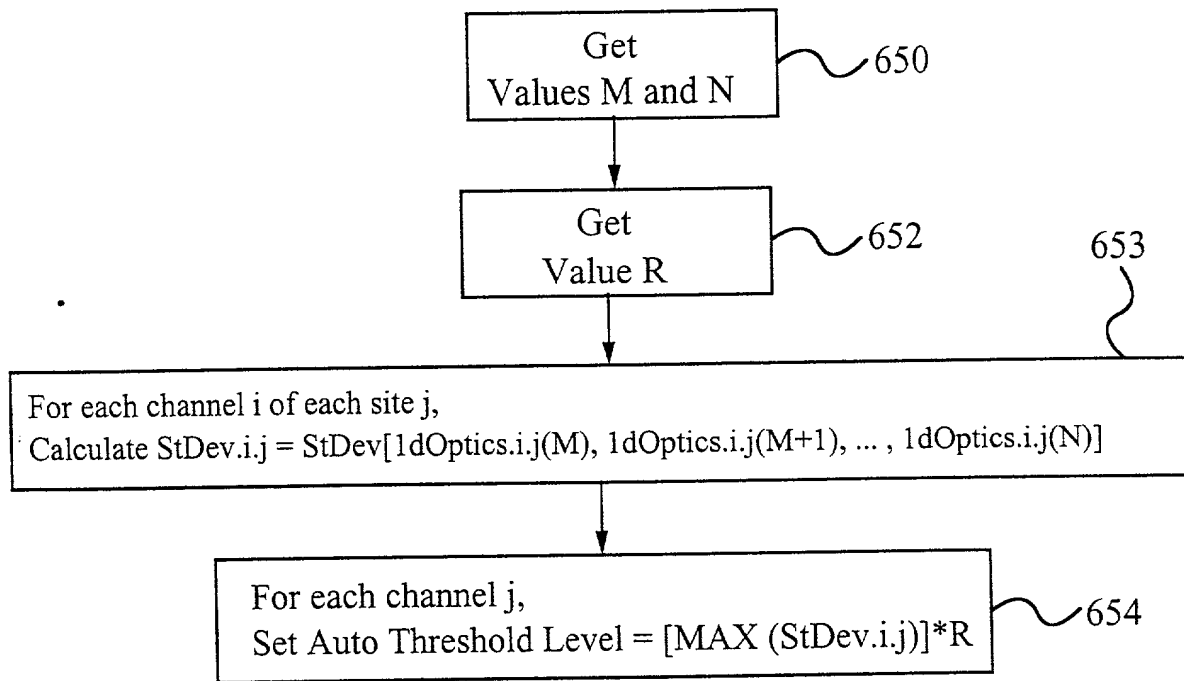


FIG. 38

**FIG. 39**

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Value of Standard				
Site	Sample Type	FAM	TET	TAM
A1	STD	1000	100	10
A2	STD	100	1000	0
A3	STD	0	0	1000
A4	STD	10	10	100
A5	STD	100	10	1000
A6	STD	1000	0	100
A7	STD	0	1000	0
A8	STD	10	100	10

**FIG. 40**

Threshold Values:				
Site	Type	FAM	TET	TAM
A1	STD	27.2	28.1	29.1
A2	STD	29.9	25.1	0
A3	STD	0	0	22.8
A4	STD	32.4	30.8	25.8
A5	STD	30.1	31.2	23.2
A6	STD	27.8	0	26.2
A7	STD	0	24.9	0
A8	STD	32.6	27.9	28.9

**FIG. 41**

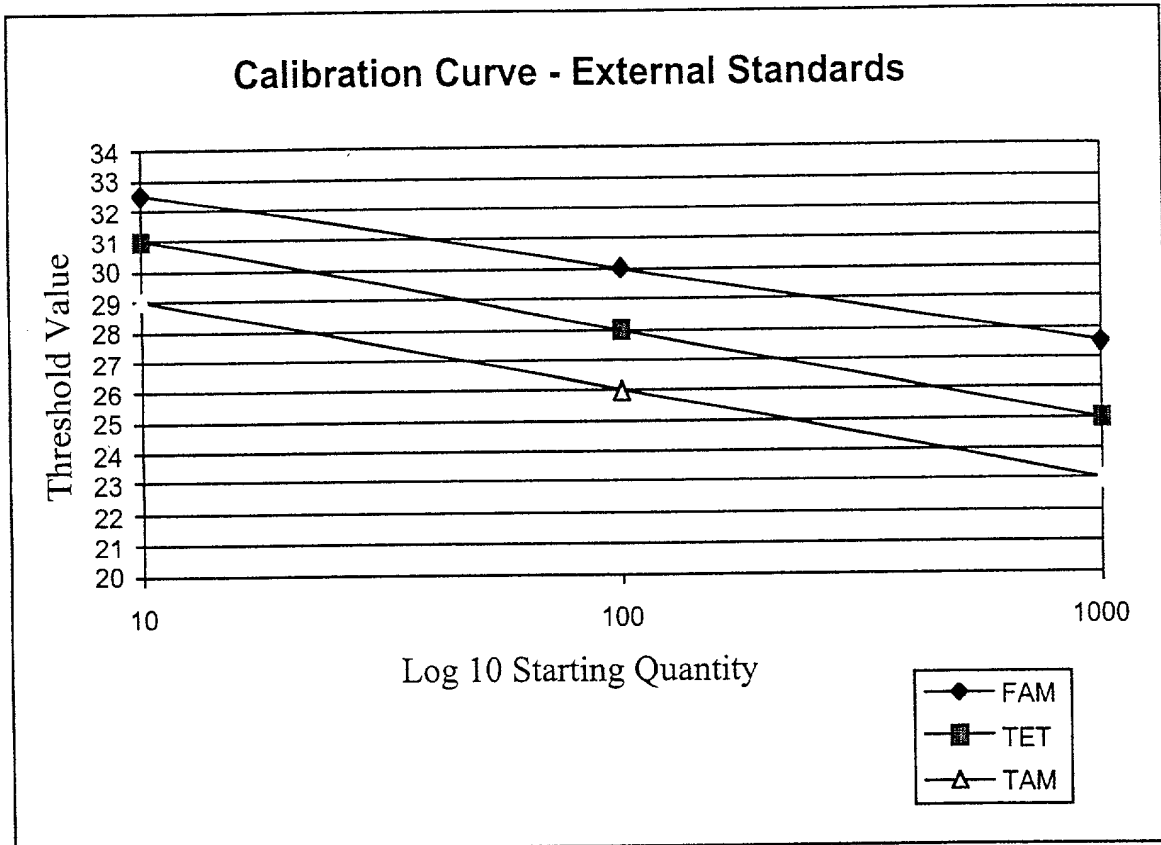
From the above data, the averages are obtained for each dye at each starting quantity

COPIES	FAM	TET	TAM
10	32.5	31	29
100	30	28	26
1000	27.5	25	23

**FIG. 42**

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**FIG. 43**

Dye:	Threshold Value	Determined Quantity
FAM	29	251
TET	29	46
TAM	24	464

**FIG. 44**



Site	Type	Value of Standard		
		FAM	TET	TAM
A1	STD	1000	100	N/A
A2	STD	100	1000	N/A
A3	STD	0	0	N/A
A4	STD	10	10	N/A
A5	STD	100	10	N/A
A6	STD	1000	0	N/A
A7	STD	0	1000	N/A
A8	STD	10	100	N/A

**FIG. 45**

Site	Type	Threshold Values:		
		FAM	TET	TAM
A1	STD	27.2	28.1	29.1
A2	STD	29.9	25.1	29.3
A3	STD	0	0	29.2
A4	STD	32.4	30.8	28.8
A5	STD	30.1	31.2	28.7
A6	STD	27.8	0	29.0
A7	STD	0	24.9	29.1
A8	STD	32.6	27.9	29.3

**FIG. 46**

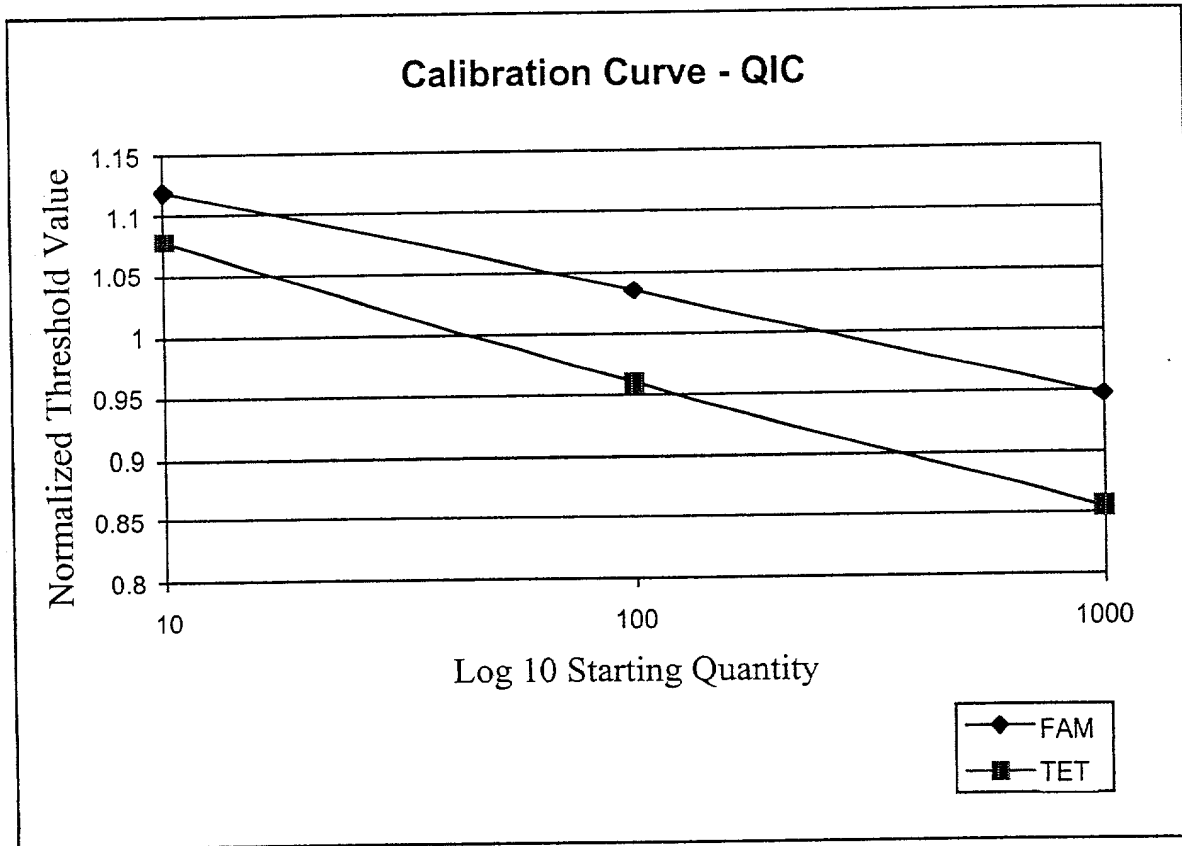
The threshold values for each standard are normalized to the QIC by dividing them by the threshold value of the QIC.

Normalized Threshold Values:				
Site	Sample Type	FAM	TET	TAM
A1	STD	0.934708	0.965636	29.1
A2	STD	1.020478	0.856655	29.3
A3	STD	0	0	29.2
A4	STD	1.125	1.069444	28.8
A5	STD	1.04878	1.087108	28.7
A6	STD	0.958621	0	29.0
A7	STD	0	0.85567	29.1
A8	STD	1.112628	0.952218	29.3

**FIG. 47**

START COPY	FAM	TET
10	1.118814	1.078276
100	1.034629	0.958927
1000	0.946664	0.856163

**FIG. 48**



**FIG. 49**

Dye:	Threshold	QIC	Ratio	Computed Concentration
FAM	29	28.8	1.006944	210
TET	30	28.8	1.041667	21

**FIG. 50**

Site	Sample Type	FAM	Value of Standard	
			TET	TAM
A1	Unknown w ISTD	N/A	100	1000
A2	Unknown w ISTD	N/A	100	1000
A3	Unknown w ISTD	N/A	100	1000
A4	Unknown w ISTD	N/A	100	1000
A5	Unknown w ISTD	N/A	100	1000
A6	Unknown w ISTD	N/A	100	1000
A7	Unknown w ISTD	N/A	100	1000
A8	Unknown w ISTD	N/A	100	1000

**FIG. 51**

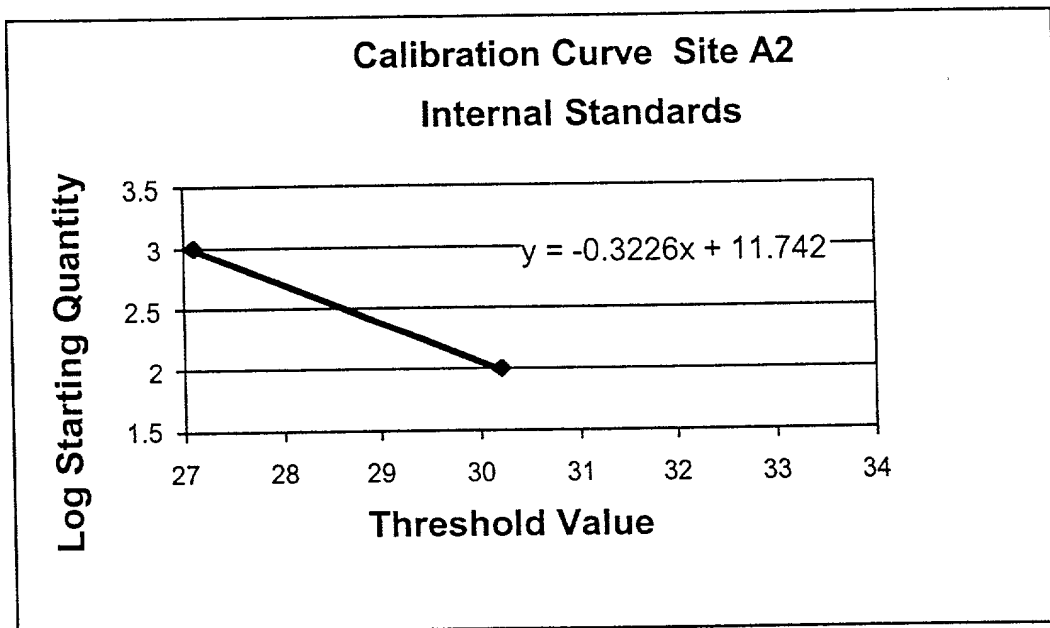
Threshold Values:				
Site	Sample Type	FAM	TET	TAM
A1	Unknown w ISTD	27.2	30.0	27.0
A2	Unknown w ISTD	29.9	30.2	27.1
A3	Unknown w ISTD	0	30.5	27.4
A4	Unknown w ISTD	32.4	29.8	26.8
A5	Unknown w ISTD	30.1	29.9	26.8
A6	Unknown w ISTD	27.8	29.5	26.5
A7	Unknown w ISTD	0	29.7	26.6
A8	Unknown w ISTD	32.6	30.0	27.1

**FIG. 52**

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Start Qty	Threshold	Log Start Qty
100	30.2	2
1000	27.1	3

**FIG. 53**



**FIG. 54**